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THE USE OF INFORMATION AND INTERACTIVE PROCESSES IN GROWTH MANAGEMENT

The Case of the New Tagus Bridge Controversy

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ABSTRACT

This research focus on the use of information in complex public decisions in multiactor, multiobjective, no unique solution processes. It specifically uses the decision process on the location of the new crossing over the Tagus estuary as a case study. Most people saw the governmental choice as "merely political", considering that information was not used for making the decision. This may be true, but there was plenty of information around and people used it, particularly after the controversy generated by the decision.

An unexpected solution, that came to be supported by planners and environmentalists concerned with sustainability, emerged out of an interactive process. The initial innocuous straightforward decision between two agreed alternatives became a controversial choice when the third one appeared. The debate shifted from the crossing location to the desired model of development for the metropolitan area.

Information was widely used and transformed. New information was generated in forums. Despite the absence of horizontal coordination, a shared model of development and a strong networking provided an integration, making this process unique. Information acquired powerful meaning and was translated into simple statements loaded with complex illuminated imagery.

Information use triggered action. New interest associations emerged and existing ones revised their strategies and operation modes. They learned to work together sharing resources, to formally deal with higher instances, and to work within wider settings. Besides, there appeared the need for restructuring existing institutions and for new ones to improve the public decision processes.

SUMÁRIO

Este trabalho foca-se no uso da informação em processos de decisão pública em contextos multi-actores, multi-objectivos, e sem resposta única. Recorre a um caso de estudo sobre o processo de decisão da localização da nova travessia do Tejo. Muitos viram a escolha governamental como sendo "meramente política", considerando que a informação não foi usada na decisão. Talvez seja verdade, mas houve informação substancial e as pessoas usaram-na, em especial depois da controvérsia gerada pela decisão.

Uma solução inesperada, que veio a ganhar o apoio de planeadores e ambientalistas preocupados com sustentabilidade, emergiu de um processo interactivo. A pacífica solução inicial entre duas alternativas tornou-se uma decisão controversa com o aparecimento da terceira opção. É então que o debate se desloca da localização da travessia para o modelo de desenvolvimento desejado para a área metropolitana.

A informação foi amplamente usada e transformada no processo, e informação nova foi gerada em forums. Apesar da falta de coordenação horizontal, o modelo de desenvolvimento desejado para a área metropolitana e a forte rede de relações *(networking)* desempenharam um papel integrador. A informação assumiu um papel importante, sendo traduzida em imagens de grande significado.

O uso da informação conduz à acção. Associações de interesse emergiram e as existentes modificaram estratégias e modos de actuação. Aprenderam a trabalhar em conjunto partilhando recursos, a lidar formalmente com instâncias mais elevadas, e a funcionar em contextos alargados. Foi identificada a necessidade de criar novas instituições e de reestruturar as já existentes para um melhor funcionamento dos processos de decisão pública.

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CHAPTER I

INTRODUCTION

The decision was made — a new crossing over the Tagus river in Lisbon will connect *Sacavém* to *Montijo*[1]. This seems to bring to an end in a remarkably short time one of the most controversial public decision processes in the Portuguese history.

> *"Never has a public work of such a dimension generated so much debate nor led to such a controversial solution"*[2].

It was even called by an environmentalist the

> *"error of the century"*[3].

There is a widespread problem today of making complex technical decisions in multiobjective contexts with many players, interests and agencies involved, and under an increasing public scrutiny. The problem is how to make technically competent decisions while also satisfying the interests and creating feasible solutions in this shared power complex context. These situations are increasingly common and we have very little guidance from the literature on how to handle them. The standard practices of using top down centralized planning and decision making, and relying on separate functional agencies are increasingly inadequate to handle these complex tasks (e.g., decisions on the National Road Infrastructure made exclusively by the National Road Authority (JAE)). Moreover, the simplistic models that we have of decision making and the role of analysis are not sufficiently helpful. This is a problem across all developed nations, and Portugal is particularly becoming confronted with it

1 Council of Ministers, 92.07.30.
2 JM Fernandes - *Público* (94.04.03).
3 JJ Melo - *Público* (94.04.03).

today due to its entrance in the EEC/EU, a growing awareness among the public and an increasing organization of interest groups.

Moreover, there is a frustrating feeling among professionals that very often important technical information produced is not used in major decisions, or is only partially used. In particular, environmental practitioners complain that decisions are exclusively political and based on economic factors. Even in cases where there was plenty of information around, some is used, some is not, some we do not know. One of the most important complaints of the researchers is that information, even when produced, is not used in the decision process.

Twenty years have passed since the political change towards democracy[4]. European and national law now requires a greater involvement of the citizens in several public policy contexts, namely plan development and environmental impact assessment. Growing citizen awareness about public issues and the environment generated a growing will of wider constituencies to intervene in public life. This intervention is restrained by the essentially regulatory existing institutions and bureaucratic decision processes. The institutions are not adequate to respond to the growing demand for a more direct involvement of the citizen. Operating as safety valves, the existing institutions[5] are better classified as courts[6] or even arenas[7] (Bryson et al, 1992), but they are far from being the forums[8] so urgently sought by citizens.

> "To effectively maneuver through the cycle of policy change in a shared-power world, public leaders must be skilled in the design and use of forums, arenas and courts, the principle shared powered settings in which the policy process occurs." [9]

The almost total lack of adequate participative institutions has contributed to a rising of frustration. In fact, the new interest groups are increasingly challenging authority when they have not been included in the process.

Lacking tradition in public interest involvement and relying in an inherited pyramidal hierarchy, our public system can no longer operate in this format. Recent changes at the societal level are forcing change to happen. Readaptation to the new needs is imperative. Institutions in Portugal are in transition. The country faces now the challenge to integrate inputs from the participative institutions in a bureaucratic public administration. The public is demanding greater legitimacy and improved justification of decisions, and a growing involvement in the decision process. It is obvious that a gap of communication exists between

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[4] A military coup in April 25, 1974 overthrew a 48 year old authoritarian regime whose strong man was most of the time the prime minister — Salazar.

[5] The basic settings within which public leadership is exercised and policy change occurs are according to Bryson the forum, arenas and courts.

[6] courts - institution of judging, which distribute and redistribute access to legitimacy.

[7] arenas - institution of decision, which distribute and redistribute access to the exercise of power.

[8] forums institution for debate, which distribute and redistribute access to the communication of meaning.

[9] *Leadership for a Common Good, tackling public problems in a shared power world,* by John M Bryson and Barbara Crosby, Jossey Bass Publishers, 1992, pp.81.

our public bureaucratic institutions and a wider constituency claiming a more participative role in the decision process. The need to integrate participative mechanisms in an highly bureaucratic administration is generating a lot of tension. This is even more difficult due to the distinct rules and procedures under which each one of these groups (the bureaucratic public administration and the participative groups) operates making it rather difficult to render compatible their working together.

A clear example of this is the decision process on the location of the new bridge over the Tagus river in the Lisbon region. The civil disobedience in June 1994 on the bridge is an indicator of the changed political climate and the reformulated set of expectations. Portugal will have to deal with this and develop a decision making process that anticipates and resolves such issues before they surface in this way. Defenders of a wider public involvement, namely environmentalists, are saying that what is needed is more consensus building, involving people with different knowledge and stakes in face to face discussions. This can help solve conflict, create relationships, networks, and social and intellectual capital.

Dialogue may be one of the ways to improve the present situation. Identification of the problems and debates may provide the possibility to link to representative democracy the advantages of the participative democracy (Roseta, 1994). This approach can be innovative and good for problem solving by generating a greater diversity of solutions, allowing for different approaches, and taking into account a greater variety of interests and issues. It can also come out with a more adequate solution. Further, advantages can be drawn from this, such as greater diversity of solutions, strong legitimization of decisions and even gains in power (e.g., Seattle and *Évora*; in both these cases an interactive planning process assured the political support of wider constituencies who reelected the Mayor despite declining votes in their own parties). What sometimes seems as a take over of power can be a way to strengthen that same power. Literature on consensus building (e.g., Innes, 1990) claims that the crucial point lies in getting the right people, the adequate data and an efficient process. Though this is a key aspect, it is important also to establish the right multiway processes.

There is often plenty of information around, some is used, some is not, and some we do not know. One of the most important complaints of the researchers is that information, even when produced, is not used in the decision process. Facts are interpreted within the existing social and cultural context. Information is not value free, but acquires meaning as it is exposed, debated and used. This "socially constructed" information is important (e.g., Innes,1990) but not enough to assure that technical advice is considered in the political settings. This explains how the office created by the government "to develop the studies needed to present a proposal for the location of the crossing", the GATTEL[10], reached agreement and came up with a new

[10] "develop, coordinate and control the activities needed for the promotion of construction and exploration of a second road crossing of the Tagus in the Lisbon region" (DL 14-A/91) .

proposal, but not why the government did not agree or follow the recommendation. It also does not explain why there was no overall consensual commitment from the municipalities, parties and some other public sectors.

Though the technical community complained that information was not used, I disagree. A substantial amount of opinions and pieces of information circulated once positions of members of government, mayors, environmentalists and other actors began to be known. Information was not used in the restricted way of making the decision in accordance to the technical suggestion, but it was used in debates and argumentation to defend positions, to express opinions and to support interests. It influenced the way people saw the issue, and in some cases it generated change.

This study examines these issues through a detailed in depth case story of the analysis phase of the proposal for location of a new bridge over the Tagus river. Initially I conducted the research in this dissertation to assess what information was used by the players, why and how it was used. Along my inquiry I found out that, though there was no obvious interactive setting, the GATTEL Planning Team set in motion a collaborative group process that had a considerable impact, particularly at the level of the technical community. This experience resulted in a lot of networking and interaction, besides favoring the development of important meaning of the technical information and a good articulation among the different topics. It produced highly credible documents. In fact, these publications were, widely used later on by whomever sought arguments in this public process.

Simultaneously, I found that the local politicians and technicians operating in the region were already invested with a previous period of reflection on the future of the metropolitan area of Lisbon as a whole. It was this group, particularly at the technical level, that expressed their distress for not being heard by the central government. Although the population, particularly the Southern residents, followed attentively the evolution of this decision process, they really only expressed themselves when they were directly affected by the increase of the toll fare, already in June 1994. Somehow, this resulted from the perception previously developed that the bridge located towards the far west of the estuary would not solve their problem -- everyday congestion. At this time, once more the complaints were that they were not heard, even when they tried to call attention, and there were no participative mechanisms. This frustrated feeling of not being heard is an indicator of the gap between the traditional bureaucratic administration and the remaining society. A growing demand to fill it in has been expressed frequently by several players.

Initially, I was concerned with what factors made information used. However, I soon found out that interaction among users was a result of the use of information and a strong factor in substantiating information coming from the different sectors, giving it powerful meaning and a coherent articulation of knowledge. This favored acceptance. Along the process

I learned about the changing processes and demands on public choice in Portugal. The case of the location of the new bridge over the Tagus estuary represents the paradigm of public decisions in the Portuguese context. This case study explores this paradigm.

The thesis research is a contribution to knowledge because it documents an innovative case, looks to it critically in the light of the literature. This case allows to build theory providing support to further more structured comparative studies. It does help to illuminate issues in the bureaucratic system, providing understanding for dealing with complex technical multiuse tasks. The dissertation looks at questions such as how information was used and what made a difference. It explores how consensus building was designed in several arenas to deal with this complex, multiparty, multi-issue problem. The study focuses mainly on the one year process (from the creation of the GATTEL in January 1991 to the decision of the Council of Ministers in July 1992) to prepare a proposal for a new crossing of the river via a special steering committee and a technical advisory group that was unlike any set up before in Portugal. However, the aftermath was closely followed to help clarify some less understood features.

This is a dissertation designed to document the public decision on the location of the new crossing over the Tagus, to illustrate the tensions in the current system and show how an innovative introduction of group processes enhanced the use of technical information. The purpose is to see how this innovation worked and why it did or did not have an impact on the final product and recommendations. It shows that the findings of this participatory analytic project did not get integrated into the final result and explains this in terms of the structure of Portuguese central government and the expectations of its members.

The group reached agreement but the government did not accept their proposals. This created considerable problems to the government, although such a disagreement with a consulting group might not have had that effect. This group did something unusual in creating a new alternative that was not in its work agenda when it found the alternatives expected to consider could not meet the goals they were given. This study asks how it happened that they reframed the problem and came up with a new solution, although it was not in their mission to do so. It also asks how and why, despite the technical groups strong consensus, the central government did not use their conclusions.

The process on the decision about the second crossing over the Tagus in the metropolitan area of Lisbon was set up to generate technical advice, but by the end it seems that not much attention was given to the proposed suggestions. However, the GATTEL Planning Team, designed to achieve technical consensus, accomplished its tasks in accordance with the phasing of the GATTEL project. Furthermore, other restricted arenas also built consensus through debate (e.g., environmental associations). What was regarded by participants as a simple, straightforward analysis and decision, between two obvious one choice alternatives, doable in a short span of time, changed when an unexpected solution developed during the studies

emerged. This new option broke consensus and transformed the process into an endless conflictual decision between the unexpected and the initially obvious solution, challenged by several entities at all levels.

What makes this case so much interesting is the wide debate it generated involving all sort of entities, the innovative processes it created, the new solutions it produced and the intense use of information. Information was used by professionals and the community at large, in the sense that they argued over it and it entered the debates, supported positions, generated new solutions. The large amount of technical information available among politicians and technicians working in the metropolitan region and the previous reflection on the metropolitan area issues were key factors for this to happen.

I found out with this case that the use of information triggers action. This is because it provides support for argumentation, it supplies people with the necessary tools to take a stand while giving them self assurance. Once this happens players may take action. While doing this they often revise their ways of operation or their strategies. This is done through interaction with other people. Interaction makes a difference because it favors further exchange of information and ideas, rendering the process richer. It might however contribute to growth in complexity by bringing to the debate additional interests and factors.

Information affects action. I found out that in this case information was used. Not in the way most people look at it, as a "direct link between data and decisions" (Innes, 1988), but as an essential ingredient for action. Information was used by professionals, activists and the public in general, and while using it made them get involved in action.

COMPLEX DECISIONS IN A SHARED POWER CONTEXT

This problem of making public decisions in multiobjective contexts, with many players and under increased public scrutiny, is the result of a complex interplay of several factors. The extraordinary scientific and technological developments of recent history provided powerful means of transformation of energy, exploitation of natural resources, production of goods, storage, processing and dissemination of knowledge and information, shortening distances and time. The large demographic growth that occurred generated new needs and interconnections due to increased population densities. The associated depletion of natural resources and the approach of 'limits of growth' brought to the decision processes new serious restrictions. A larger educated society raised the general understanding of issues and provided a much wider group of people with techniques for analysis, for expressing their points of view and for defending their interests. The more recent development of extremely powerful means of knowledge and information handling and communication, and the associated growth of public information through the media, led to a much wider constituency in public issues. The

emergence of an 'open society' called for a wider participation of people in public decision processes.

From a practical point of view, the problem is how to make competent decisions taking into account the possible satisfaction of involved interests and leading to feasible solutions in this complex 'shared-power' context. Though this problem arises in increasingly common situations, we have very little guidance from the literature on how to handle it. The standard practices of using top-down centralized planning and decision making, and relying on separate functional agencies are increasingly inadequate for such complex tasks. Moreover, the simplistic models of decision making that we have, and the role of analysis, are not sufficiently helpful.

This is a problem across all developed nations, and Portugal is particularly becoming confronted with it today due to an increasing educated population, a wider awareness of the factors involved in public decisions, an increased organization of interest groups and an expanded information delivered through the media, enhanced by the emergence of the first private TV channels in the country. The recent entrance to the EEC/EU accelerated the process through a tremendous increase of available development funds, new requirements of public participation and an enlarged decision context involving new instances of conflict resolutions, namely at the European level.

CONSENSUS BUILDING THROUGH GROUP PROCESSES

Proponents of a wider participation, in particular environmentalists, are insisting on the need of more consensual decisions, involving the participation of people with different knowledge and stakes in face-to-face discussions.

The literature on consensus building points out that, although its methods are based on mediation and negotiation techniques and on experience in disputes, for policy purposes it also performs a broader and more anticipatory role, involving "the framing of public issues, developing agreement on facts, and then setting desired policy directions, developing plans, regulatory principles and even implementation strategies" (Innes *et al.,* 1994)[11]. The crucial points in effective consensus building processes are identified as getting the involvement of the right people, providing access to the adequate data, and assuring an efficiently managed process.

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11 Innes, Judith, Judith Gruber, Michael Newman and Robert Thompson (1994) *Coordinating Growth and Environmental Management Through Consensus Building.* A Policy Research Program Report. California Policy Seminar. Berkeley, University of California. (pp.5).

An earlier and wider involvement of diversified constituents in well designed forums will have consequences at four levels: identification of stakeholders interests, conflicts avoidance and resolution, problem solving, and decisions legitimation.

In fact, open wide debates involving stakeholders at early stages of the decision process will: *(i)* improve the knowledge on different actors interests and commitments, bringing to the forefront possibly unexpected points of view; *(ii)* help to avoid and/or resolve conflicts, create relationships and networks between participants with varied and maybe conflicting interests, and develop a common social and intellectual capital hardly attainable otherwise; *(iii)* generate a greater diversity of solutions, allow for different approaches accounting for a greater variety of interests and issues, increase the likelihood of coming out with better decisions by widening the range of options and by confronting them with unforeseen points of view; *(iv)* enhance the legitimacy of decisions and even allow gains in power to politicians. This may at first sight appear as a sharing and weakening of the decision makers power, but such a process can be a way of strengthening and rendering more effective that same power by expanding the supporting constituency, thus providing an appropriate setting for linking representative to participative democracy.

THE CENTRAL ROLE OF INFORMATION

Bridging the gap between the interests of stakeholders as well as supporting the analysis of different decision options and a choice between alternatives requires the contribution of information. A central role is played by information and knowledge in the two following extreme decision process models: *(i)* the hierarchical, bureaucratic, goal oriented, highly rational, expert-based decision making around narrowly defined problems, and *(ii)* the shared-power, fragmented, issue oriented, multiobjective, broad agreement decision-making around complex problems. These models represent two extremes of conceptual frameworks and can appear mixed together in real decision processes. Information is used differently in each one of them. It is mostly used in a restricted expert based context in the former pure model and in a broader interactive setting in the latter.

In the second model, the achievement of shared views and consensus or broad agreement among different stakeholders requires "a process of constructing, deconstructing and reconstructing beliefs" (Dunn, 1989) for which the confrontation with information is essential. Facts are interpreted within an existing social and cultural context. Information is not value free, but acquires meaning as it is exposed, debated and used. This 'socially constructed information', as it is sometimes called, is important in public decision processes and constitutes an "intellectual capital, in the form of shared and agreed upon facts and understandings, (that)

provides a common basis for discussion and moves the players towards agreement on policy issues" (Innes *et al.*, 1994)[12].

THE LOCATION OF A NEW TAGUS CROSSING IN LISBON THE CASE: BACKGROUND AND OVERVIEW

One century old history, two historical pathways

The one century old history of debates over crossings of the Tagus river in Lisbon evolved since the end of the last century. The high potential for reshaping a whole metropolitan area and the impact on the transportation network are already reasons enough for generating controversy and debate. For more than a century studies and projects have been proposed by engineers, firms and public agencies. Technical limitations and costs, forced the search for the shortest path between both banks. Since the first proposal in 1876 until nowadays, the projects presented considered just the two shortest pathways connecting Lisbon to the other bank in *Montijo* and *Almada.*

The professionals working in the area usually considered only the two shortest pathways, despite more recent technological advancements, the new emerging urban approaches and the changes in the urban features of the metropolitan area in recent years. But things changed since the initial crossing proposals. Nowadays, technological advancements allow for wider alternative locations which were difficult at the end of last century. Plus, the new concerns with the environment, and the concept of sustainability associated with the notion of limited natural resources, forced urban planners to revise the old planning models and to give higher priority to the way land is used. Moreover, the changing demographic and economic trends in Lisbon called for new policies. The decreasing of the number of residents in Lisbon and the shifting of the tertiary functions upwards North is having negative effects on the core of downtown and requiring revitalizing policies.

These new realities did not trigger significant changes before the creation of the GATTEL. The historic restriction of the possible Tagus estuary crossings reduction to the two shortest pathways influenced the plans and debates developed in the area, keeping professionals operating in the region attached to this mental framework. This is easily confirmed by the plans in development for the area prior to the GATTEL studies, which only considered the crossing in *Montijo* (e.g., PIDDS[13], municipal plans, written documents from the forum of municipalities issued before the creation of the GATTEL, Electoral Manifest for the Lisbon Municipality in 1989).

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12 *idem* (pp.47).

13 PIDDS - *Plano de Desenvolvimento do Distrito de Setúbal* - *Distrito* of *Setúbal* Development Plan.

The 25th of April Bridge follows the two shortest pathways rationale

The construction of the first bridge[14] across the estuary, under Salazar, followed the two historic pathways rationale, fulfilling one of them — *Almada*. Opened to traffic in 1966, this bridge generated high development in the Southern bank, due to lack of experience, underestimation of the consequences, and inadequacy of controls. Fixed bridge fares over the years did not take into account inflation, contributing in real terms to increase accessibility to the South.

Already at the end of the 1950's, the governmentally mandated commission for the construction of the existing bridge showed concern with the possibility that the accessibility provided by the bridge would generate undesirable development. The Commission expressed concerns that the bridge would lead to "urban expansion". It defended turning the bridge into an exclusive interaction device and suggested ways to avoid development side effects usually brought by increased accessibility. The existing bridge opened a new front of development in the much less expensive land of the Southern municipalities. *Almada*, *Seixal* and *Barreiro*, the municipalities closer to the bridge, grew chaotically, due to the unmanaged expansion pressure.

The Southern population growth, the increasing number of vehicles in circulation and the strong dependency on jobs located in the capital generated traffic growth that exceeded the bridge capacity. Congestion on the bridge compromises the residents quality of life and the economic development of the region. The government concerned with the situation decided to initiate the studies for a second bridge and enacted legislation to create the GATTEL.

Effects of the 25th April Bridge imprint on the minds of concerned professionals

A large number of professionals working in the area still have in their minds the urban development of the Southern municipalities that followed the construction of the 25th of April bridge. They associated these consequences not only with the increase of accessibility, but also with the fact that it established a direct link between an urban and a rural area, without having assured adequate land development controls. Even today, some professionals consider that adequate controls would prevent this from happening again, while others think that it is not possible to enforce them.

Open to expansion by the increase of accessibility provided by the new bridge, the rural Southern bank went through drastic urban development during the years that followed the construction. Cheaper land for development was available in the Southern bank as soon as the

[14] First called Salazar Bridge, after the political regime strongman and afterwards changed to 25th of April Bridge following the miitary coup of April 25, 1974, that overthrew a 48 years old authoritarian regime.

decision to construct the 25th of April Bridge was made known, creating a reserve of land for needs well beyond the year 2,000.

With the development of the South, mostly for residential purposes, and the continuous dependency of its residents on North bank jobs, the traffic grew and exceed the bridge capacity. The generated congestion compromised the quality of life of everyday commuters. Long lines[15] of vehicles line up every morning to enter Lisbon, frequently taking up to 2 hours to reach the 3 km long bridge platform. Presently, the North-South road connection has proved insufficient. Both bridges serving the area — the 25th of April Bridge in Lisbon and the *Vila Franca de Xira* Bridge 25 km North of Lisbon — have reached their maximum capacity and the traffic is subjected to delays caused by congestion that generates long lines of vehicles.

Other paths to the South

The other crossing proposed and assumed generally by the professionals is in *Carregado*. The National Road Plan (1985) proposed this bridge to capture the North-South traffic and to relief congestion of the *Vila Franca de Xira* Bridge. *Carregado* is well away from the estuary in a narrower river path about 30 km North of Lisbon.

Decision on the construction of a new bridge

The government decided to construct a new crossing over the Tagus river in Lisbon connecting *Sacavém* to *Montijo*[16]. This brought to an end, in a remarkably short time, one of the most controversial public decision processes in Portuguese history. "Never has a public work of such a dimension generated so much debate nor led to such a controversial solution"[17]. It was even called by an environmentalist the "error of the century"[18].

The media began referring to the possible construction of a new bridge in 1990, when the government had a working group considering that possibility. In January 1991, the government created the GATTEL, the group assembled to "execute, coordinate and control the needed activities to promote the construction and exploration of a second road crossing of the Tagus in the Lisbon Region"[19].

The GATTEL appeared in a period of an intensive local and regional urban and transportation planning activity. Policy guidelines for the restructuring of the metropolitan area and some of its subsections were under way. The involvement of several entities in these processes (municipalities, regional commission, municipalities association, transportation agencies) created space for debate and interaction. Professionals working in these plans and

15 frequently 12 km long.
16 Council of Ministers 92.07.30.
17 JM Fernandes - Público (94.04.03).
18 JJ Melo - *Público* (94.04.03).
19 DL 14A/91.

studies became more acquainted with the region and had the possibility of reflecting on the issues. This developed the "intellectual capital" that made the process unique. A high interaction among public agencies, professionals, municipal politicians and technicians developed as a result of the simultaneous involvement of several agents in these plans. This interaction grew during the development of the GATTEL studies for the location of the new bridge.

Previously and simultaneously with the studies developed by the GATTEL on the bridge location, planning and transportation plans under way in the region created a space for discussion and reflection on the future of the metropolitan area. Information flowed, interaction among entities and debates developed. The municipalities were preparing their local plans. Meetings among politicians, professionals (consultants and municipal technicians) and, in some cases, the population were held. By the end of the 1980's, due to the forthcoming regional land use plan for the Metropolitan Area of Lisbon, these entities held joint meetings, searched for consensus, carried on debates on concerns and future expectations either for their territory or for the region as a whole. For the first time, wide debates among professionals and politicians operating at the municipal level were organized to agree upon the desired future for the metropolitan area. Written documents came out of these meetings, a focus that continued throughout the development of the Regional Land Use Plan for the Metropolitan Area of Lisbon (PROTAML).

As a municipal technicians said:

> "there were almost daily meetings between groups for discussing 'everything'; it was a very interesting period. ... There was a 'metropolitan reading', a will developed in the people to not only look at his/her municipality *per se* but also in relation to the metropolitan area, (considering) the vocation of each municipality within the metropolitan area, and understanding what was expected from it."

This means that the municipalities increased their capacity to think regionally.

The unexpected alternative

With the location in *Almada* covered by the existing bridge, the municipalities and the GATTEL assumed that the future connection would be in *Montijo*, the historically rooted alternative. It is within this setting that an unexpected solution was developed by the GATTEL during the studies, transforming the once innocuous straightforward decision between two agreed one choice alternatives, into a controversial choice between an unexpected additional option and the previously widely accepted solution.

In reviewing the data and discussing the issues, the GATTEL Planning Team observed that the alternatives considered were inadequate, including the one everyone initially accepted. The GATTEL Planning Team organized brainstorming sessions to generate all possible connections. Individuals involved in these sessions put together the environmental constraints

map and the road network system in both banks to obtain the possible crossing corridors. The corridors generated by this process were debated and their feasibility assessed. One of these corridors obtained support in these sessions — the central option. Though feasible for a road connection, it was not clear that it could also be adequate for a train crossing. Not sure about it, one of the professionals gathered a few other team members to check this possibility in the field. And, as a surprise to all, including themselves, a third alternative for a road and train crossing, that nobody anticipated at the outset was developed.

The GATTEL made public the unexpected crossing — the central corridor or *Barreiro* crossing — and it gained acceptance and legitimacy within the technical community. One transportation planner, while interviewed, showed amazement about the unexpected alternative, by stating

"It is incomprehensible how it took so long to find out. No one had seen what was under our eyes."

The unexpected option represented a change to an already institutionalized solution. Some professionals had a first negative reaction to it, due to a perceived overburden that would result from connecting two already developed areas. However, the proponents of the new alternative argued that this option was a recovery device for two economically depressed areas and that it had greater potential to capture the traffic on the existing bridge. After understanding the rationale of the arguments in favor of this option and getting used to the idea, a growing number of professionals perceived the opportunity created by the new alternative and enthusiastically adopted it. Even the professionals who insisted in sticking to the East corridor in *Montijo*, sometimes said during the interviews that both bridges were needed and the question was just a matter of priority.

Initially, in accordance with the problem definition, the search was for a solution for the existing congestion on the 25th of April Bridge. As the studies developed and the unexpected alternative emerged the discussion shifted to the wanted future image of the metropolitan area. The municipalities had to revise their options and, mostly in the South, they lined up on the issue according to geographical location. The unexpected central corridor option, favored by the GATTEL Planning Team, as stated in its reports, connects Lisbon to one of the most populated areas in the South. Most municipal technicians and politicians of *Almada*, *Barreiro* and *Seixal*, the more populated Southern municipalities responsible for the generation of most of the traffic in the existing bridge, saw the newly developed alternative as an opportunity. It would more efficiently address the congestion problem by capturing traffic from the existing bridge. Simultaneously, this option was an economic opportunity for two depressed urban areas — *Chelas* and *Barreiro*. It also avoided damaging the environmental amenities in the periphery of Lisbon, preventing from opening new development fronts and taking advantage of already infrastructured spaces. So it was also an attractive solution for environmentally

concerned individuals. These were not, at the time, considered goals for the location decision, but were seen as strong advantages of this solution.

The whole debate centered around the new option and the previous widely accepted solution that came to be the governmental choice. This decision was strongly opposed by environmental groups. They argued that it would irreversibly damage an area of high natural value. For the first time in Portugal a decision of the Ministry of Public Works was publicly challenged by other Ministries (Ministry of Planning and Ministry of Environment). Also for the first time, a judicial complaint was filed by an environmental association against the Portuguese government.

Besides the high potential of the bridge to spatially reshape a whole metropolitan area, what makes this case so interesting is the public controversy generated over the solutions proposed, and the amount of available information a wide number of participants debated, changed and articulated during the whole process. Though congestion and the North-South connection were stated in the legislation, several other issues emerged, namely environmental protection, urban development model, cost, technical problems of bridge construction, improvement of quality of life, infrastructures, train connection, location of the new airport.

Some arguments played a powerful role in reframing the people's views along the process. Change occurred because the arguments used became meaningful and accepted. This meaning was developed along the process in the forums created. During the whole process forums developed while informal information links were created to exchange updated information. This built trust and provided space for debate. The more formal forums, organized by the GATTEL, municipalities, the Municipalities Association, political parties, professional associations and interest associations, expanded the opportunity to display and debate a large amount of information. The strong link established between the central corridor and the economic recovery of two depressed areas North and South of the river, the amount of traffic capture from the existing bridge and the challenge of the old urban development model for Lisbon, were central for people changing opinion. The importance of these arguments can be appreciated by recalling that previous plans considered the *Montijo* crossing. Several municipalities were reaching the final phase of their Municipal Plans, what made this change more difficult to them due to the necessity of adopting the plans to the new option.

There is evidence that some participants who initially did not accept the new alternative changed their minds later on. One municipal technician, who at first reacted against the new solution, came to accept the arguments supporting it and in one week generated the necessary layouts to make that option possible in his municipality. Initially, the process was set up to achieve technical consensus, but by the end it was not clear how much attention the government gave to the developed technical advice. The technical reports produced by the

GATTEL reveal a preference for the central corridor, contradicted in the final recommendations of the GATTEL Document 6 written and signed by the Steering Committee.

Most of the interviewees said that "it was a political decision", implying that factors other than the technical advice had far more weight. A transportation planner stated that

"never was the gap between a technical study and a political decision so wide."

Once more the usual complaint that the information processed was not used afterwards for the final decision came out.

According to many actors, this process was not so different than most public decision processes they knew. However, some actors considered that there was much information going around and that it was a "more open" process, meaning that it had a greater access to information and involved wide debates. It is true that information was not fully used in the traditional rational model view. However, beneath the surface, the feverish activity generated by the opposing groups, urged to defend their positions, created informal information exchange, networking, joint studies, concerted actions and the emergence of interest groups. This whole debate led, among other things, to innovative processes of informal organization. This is more important because Portugal is in an early stage of the participation process and therefore, in a period of designing adequate institutions to carry the task. A wider use of technical information is a key factor in the process of developing participative mechanisms, but it is far from being the only one. It is, therefore, crucial to analyze the way technical information is used, changed and reformulated, as well as the processes established to do it. This may provide us with some clues on how to design the settings for enhancing participative mechanisms.

Debates over the data collected (land use, environment and transportation), particularly within the technical community, produced information and generated new concepts reshaping the way people were looking at the issue, sometimes making them abandon the previously position for the new one, but surely there was no consensus. The objectives stated in the legislation influenced the problem definition, though people interviewed molded the problem according to their interests, views, factors at stake, images and convictions. The unexpected alternative brought a new way to look at the problem affecting people's views. In the process (1) consensus was broken, (2) the old image of the town was challenged, (3) the old consensual urban model was challenged, (4) the problem was reframed, (5) new images developed, (6) new alternatives emerged, (7) innovative actions appeared, (8) debates occurred. I argue here, that all this activity was only possible because technical information was used, debated, reframed, changed, added. It had an important role in educating, in promoting regional thinking, in making people aware of solution packages, in creating new shared meanings and myths, in developing new images, in establishing informal interaction

networking, in circulating information that would otherwise stay indoors. This new intellectual capital will influence the regional and local policies in the years to come.

A change already happening is that people who continued defending the *Montijo* connection consider a second bridge in the central corridor as essential, though as a second priority. Some people even reported that the Minister of Public Works, who stood for *Montijo*, is one of them.[20] My arguing here is that the initial framing of the problem of the crossing was inadequate, as it was proved later. It was not a one solution issue, therefore lack to provide space for reframing the problem made the conflict unavoidable because of the number of interests in the area.

This dissertation focuses on the use of technical information, why it was so widely used and whether its use made a difference. It is not a political science dissertation. Therefore, it does not focus on the government decision, but in the whole process. In sum, it is a thesis in planning.

[20] Enacted legislation reserves land for the construction of a future bridge in the central corridor.

CHAPTER II

LITERATURE REVIEW

INTRODUCTION

To lay a background for the study, it is important to conduct a review of the literature on relevant conceptual and methodological aspects, and on the topics of direct interest. Underlying the whole research are central issues of knowledge use in policy. To set up the stage, these issues are briefly reviewed here inspired in the line of thought of the survey in Judith Innes introduction to the second edition of her book *Knowledge and Public Policy* (1990). Aspects regarding bureaucracies, as well as pluralism and interest groups are also considered. The rest focuses in the following topics: (i) communicative action; (ii) critical theory; (iii) discursive democracy; (iv) forums, arenas and courts; (v) stories and myths in the creation of shared meaning; (vi) consensual group processes; (vii) growth management; (viii) complexity of environmental problems.

POSITIVISM, THE SCIENTIFIC MODEL AND BUREAUCRACY

The 18th century dream of reason in public affairs is reassured by positivism--

The dream of reason in public affairs marked the 18th century Enlightenment and was reassured in the 19th century *positivism.* The promise of the positivists was that "misery and ambiguity" or the "speculations of theology and metaphysics" would be abandoned and "knowledge would replace politics".

In the positivist view all "real" questions would be answered by the empirical methods of the "natural" sciences or the formal methods of logic and mathematics. Anything that could not be formulated in terms of these methods would be considered meaningless.

--and reinforced by scientific management in the 20th century

The 20th century scientific management in industry and government reinforced this promised logical positivism. This movement was especially significant before the Second World War, but its implications for the social sciences were felt through the 1950's and 1960's when determined efforts were taken "to cast the social sciences in the mold of the positivistically conceived natural sciences" (Torgerson, 1986).

Policy makers were expected to use research knowledge to make a decision as scientists use the empirical evidence of experiments to test a hypothesis. The work of experts was supposed to be absolutely objective

The key of the scientific model of knowledge use in policy is the belief that policy makers should use facts, statistics, theories and findings of formal research and analysis to make a decision in much the same way as scientists use the empirical evidence of carefully designed experiments to test a hypothesis. Knowledge production and use are separate activities. Policy makers do the goal setting, experts produce the knowledge and do the analysis, and policy makers make the decisions. Experts are supposed to be unbiased and absolutely objective (Innes, 1990). Their work, when competent, is expected to be impersonal, independent of whoever performs it in practice.

***Bureaucracies* were conceived precisely as impersonal instruments for the realization of ends determined by policy makers. The norms of rationality of a bureaucracy are those of cost-benefit analysis**

It is precisely as impersonal instruments for the realization of ends determined by policy makers that *bureaucracies* were conceived (Max Weber, 1947). "A bureaucracy is set the task of achieving within the limits set by certain legal and physical constraints the most efficient solution of the problems of realizing such ends with the means available" (MacIntyre, 1977). Its impersonality allows those that have to deal with it over time to have intelligible "continuous relationships" with the organization, no matter who are the acting individuals. This implies that files or computarized records are essential to bureaucracy, and that "established and agreed criteria of sound reasoning" are presupposed, independently of the particular agents involved. Therefore, there must also exist presupposed methods for estimating costs and benefits for every proposed

course of action. Thus, the norms of rationality of a bureaucracy are those of cost-benefit analysis (MacIntyre, 1977).

In a bureaucracy, questions of alternative policies appear to be answered in the same way as simple questions of fact. The point of view of *utilitarianism* is adopted: courses of action are selected by their greatest expected balance of benefits over harms — their utility — pretty much in the same sense as scientific hypotheses are selected in science by their greatest explanatory utility of empirical evidence (MacIntyre, 1977). It is a point of view supported in *instrumental rationality:* courses of action and institutions are judged and justified as instruments to resolve well-defined problems under given goals.

In a bureaucracy, alternative policies are chosen on the basis of *utilitarism,* with utility being the expected balance of benefits over costs, supported on *instrumental rationality*

There are social scientists concerned with making social science knowledge more useful to the improvement of society at least since the publication of Lynd's *Knowledge for What?* (1939). In this book, to the claim "social science is not a scholarly arcanum, but an organized part of the culture which exists to help man in continually understanding and rebuilding his culture" Lynd adds that "culture presents acute problems demanding all the intelligence science can muster" and that "social research appears to him to be falling short of meeting this need". He was worried that what he perceived as the overspecialization, the fragmentation, of the social sciences would be an obstacle to its contribution to human emancipation and betterment, and criticized the tendency found among social scientists to divorce research from values.

Social science at the service of the improvement of society has been sought--

With the Great Society programs of the 1960's, an expanding group of academics shared Lynd's ideal of rendering social science knowledge to the service of society improvement, some of them drawn from professional fields such as planning. The scientific model of knowledge use was predominant at this stage, with the development and application of techniques such as evaluation and program planning, system analysis, cost-benefit studies, data banks, large-scale computer models (Innes, 1990).

--by an expanding group of experts using the scientific model of knowledge use

PLURALISM AND INTEREST GROUPS

Popper argued that the success of instrumental rationality requires wide free conjecture and criticism in an *open society* based on democratic *pluralism*--

Karl Popper (1966) argued that instrumental rationality can succeed in politics only under conditions of wide free conjecture and criticism, due to the necessarily imperfect knowledge that is possible in a complex and uncertain world. He considered hierarchy and centralized bureaucracy as obstacles for such criticism and called for an *open society* based on democratic *pluralism,* the participation and influence in everyday politics of a plurality of individuals and groups, including not only policy makers and experts, but also ordinary citizens, organizations and interest groups.

--and realizing for politics the ideal of the scientific community. This presupposes a maximal generation and dissemination of information about public policies which are to be subjected to open public scrutiny and discussion

The open society is viewed as an adaptation to the political context of the ideal of a scientific community governed by free conjecture and criticism for problem solving, subjected only to a shared set of "good practice" norms. From this perspective, public policies should be carried out in a way similar to scientific experiments, under controlled conditions for a clear analysis of causes and effects and open to open criticism before and after their adoption and during their implementation. This leads to the conception of an "experimenting society" based on a maximal generation and dissemination of information about possible policies which are to be subjected to open public scrutiny and discussion in properly designed forums (Dryzek, 1990).

In a pluralist society, *interest groups* are necessary, as they link state to citizens, induce more use of knowledge, create informative networks, help to educate citizens on public issues, allow for interactive policy making

From the point of view of pluralism, interest group politics is both legitimate and necessary in democratic policy processes. *Interest groups* are, in general, small organized minorities, single cause or single interest in their focus, which attempt to influence public policy. As such, they provide a linkage between the state and major sectors of society, induce the use of more information and analyses in the discussion of policy problems, create informative networks among the group members, help to educate citizens on questions of importance for public issues, allow forming feasible working agendas by bringing groups of people together behind common preferences and interests, provide a plural surveillance mechanism on public policy practice, allow for interactive policy making (Lindblom, 1980).

INADEQUACY OF THE SCIENTIFIC MODEL OF KNOWLEDGE USE

The scientific model began to be widely questioned in the 70's

The scientific model of knowledge use began to be widely questioned in the 1970's with several objections being raised pointing out some of its limitations and flaws.

Cost-benefit analysis does not say what actions to take--

Alice Rivlin, after several years in the White House Budget Office, recognized cost-benefit analysis as good in comparing costs but not in saying what actions should be taken (1971).

--and stands on an intricate scheme of implicit values and beliefs

In cost-benefit analysis, a range of alternative courses of action are subjected to utilitarian tests. These always presuppose some prior choice of alternatives. Furthermore, they presuppose one single concept of benefit and harm which can be quantitatively graded. They also assume the possibility of a calculus of overall benefit and harm summing up the range of benefits on one hand and that of harms on the other to calculate which course of action is expected to lead to the greatest utility. However, benefits and harms are often incommensurable. Measuring and rank-ordering them presupposes the adoption of a scheme of values. Not only there are alternative methods of rank-ordering, but also different actors will adopt and argue for different methods. There is also the question of what are the effects of a possible action which, in turn, raises the issue of how to settle on reasonable standards of prediction. Besides, on deciding what effects are to count as consequences of a particular action, some judgement is necessary on how far the responsibility of the action goes to decide where the chain of effects to be evaluated ends. This is again a matter of value judgement. Furthermore, a decision must be made about the time-scale to be adopted in evaluating consequences, how short-term utility should be weighted against long-term utility and how to account for differences in predictability. Utilitarianism thus requires a background of beliefs, values and evaluative commitments (MacIntyre, 1977).

Rational options may fail to adequately explain decisions; conclusions of

Allison's study on the Cuban missile crisis under different approaches challenged the usefulness of the positivist model by showing that the decisions afford easier explanations either in terms of bureaucratic behavior or game playing than rational

rational analysis depend on conceptual frameworks and assumptions

options. This work, entitled *Essence of Decision — Explaining the Cuban Missile Crisis* (1971), explores three alternative conceptual frameworks of analysis: the "rational actor model", the "organizational process model" and the "governmental (bureaucratic) model". However, many other alternative models are possible, focusing, for example, on individual cognitive processes, or the psychology of central players, or the role of external groups, as well as different blends of the several models mentioned. Allison study calls attention to the possibility of coherent rational analysis reaching different conclusions from the same facts, according to the underlying assumptions and categories associated with the conceptual model adopted as frame of reference.

Social data and analysis are not value-free

The idea that social data could be value-free and unbiased was also challenged. Ethical and legitimacy concerns in policy settings were raised. Probably one of the most important critiques of the conventional policy analysis model was advanced by Tribe, who argued that "analysis is often intended not only to aid the decision-maker in choosing a course of action, but also to help *persuading others* of the justifiability and wisdom of his choice" (Tribe, 1972, 1973), suggesting that "politics wears the mask of knowledge" (Torgerson, 1986).

The disappointment, felt by the mid 1970's was expressed through criticisms that social scientists got the theory wrong, policy makers were too "political" to use the information, or "the world was too complex for scientific knowledge to be of much help" (Innes, 1990).

Policy makers who reported using social research knowledge frequently meant the use of concepts and perspectives rather than specific findings. The *two-communities* theory attempts to explain

It is worth mentioning here Caplan's research on social science knowledge use within high level federal policy makers (Caplan, 1975). The study involved about two hundred interviews. Curiously, respondents showed positive attitudes towards this type of knowledge, claimed an ability to assess its objectivity and even perceived themselves as using it. However, the study finds little evidence of use of specific social science findings for specific purposes. Those who said they used social research knowledge in policy meant mainly the use of social research perspectives and concepts. This widely cited study was

the basis for the *two-communities* theory (Caplan, 1977) that explains the findings by observing that social researchers and policy makers are part of different cultures with different values and incentives.

this on the basis that social researchers and policy makers belong to different cultures

Other studies that, approximately at the same time, obtained similar results regarding to the use of social research in policy were those of Knorr and Weiss. The first study was based on interviews of seventy governmental officials of the federal, provincial and city governments in Vienna, and on questionnaires sent to over 600 Austrian social researchers (Knorr, 1977). The point of departure for this study was the belief that research was mainly used to legitimate decisions taken even before the research was done, and to manipulate the consent of the citizens, very differently from that of Caplan who was looking for confirmation of direct and instrumental applications of research findings to decision making. Weiss' study was directed to identify which characteristics of research studies were associated with usefulness. Over 250 decision makers in issues related to drug abuse and mental health were interviewed on the basis of their reading of actual research reports (Weiss, 1976).

The study conducted by Weiss revealed that research quality (technical quality, objectivity, consistency), conformity to user expectations, action orientation (practical implications and feasibility), and challenge of the *status quo* are factors that impact positively on usability, the first two providing a basis for trust in the research and the two others offering a sense of what to do (Weiss, 1976).

Usability is enhanced by factors as research quality, conformity to user expectations, action orientation, and challenge of the *status quo*

There were limitations in the conceptual frameworks adopted. For instance, like in most contemporaneous studies on knowledge use, Caplan focused on the "scientific variety" of knowledge an relied on the survey methodology, inquiring on the individual perceptions and leaving aside the context within which the information was processed. Although interaction was identified as a key factor, it was not found how providers and users of information interacted. Furthermore, since he relied on the assessment of the policy maker to identify information, his interpretation of results was limited (Innes, 1990).

NEW IDEAS FOR UNDERSTANDING KNOWLEDGE USE

A "more useful framework for examining knowledge use" (Innes, 1990) was essential to understand its role in the policy process context. Several new ideas arose.

Enlightenment of decision makers

Social science knowledge *enlightens* decision makers more than provides specific answers--

The *enlightenment* concept (Janowitz, 1970) considers that social science knowledge has its most important role as influencing the decision makers through "enlightening" them, changing the way they see issues, rather than providing answers, solving problems or even playing a quantifying role in the decision making process. Actual findings are not directly translated into decisions but are transformed into a "story". Knowledge influences decisions through gradually changing concepts, insights and assumptions over time. This influence is observed in two ways: by confirming things policy makers already suspected but could not state with confidence, or by making them see issues in a new way (Weiss, 1977). Policy makers value particularly the last one since they welcome the opportunity to use the research to justify reforms (Innes, 1990).

--a concept that does not fit in the scientific model--

The enlightenment concept does not have room within the scientific model of knowledge use, since it represents a rather "elusive" phenomenon (Innes, 1990).

--but may be more important than authoritative problem-solving

Lindblom and Cohen, in their book *Usable Knowledge — Social Science and Social Problem Solving* (1979), go further to argue for the relative importance of "enlightenment" over "authoritative" problem-solving. They point out that

> in some minds, only social engineers need authoritative knowledge—that is to say, only pPSI[1] who are pushing for specific practicable solutions to well-defined problems

whereas

> when one casts for examples of PSI's contribution to social problem solving, the most obvious examples are not the social engineering studies offered to government agencies, but seem to be the more

[1] To stress the point that they were addressing studies, analyses and research activities of "professional investigators of the social world" in a wider sense than most academic social scientists would regard as social science, Lindblom and Cohen use the expression *professional social inquiry,* abbreviated as *PSI,* and refer to practitioners of PSI as *pPSI.*

fundamental enlightenment of thought achieved by such practitioners of PSI as Adam Smith, Marx, Freud, and Dewey.

Public policy problems are wicked

Public policy problems, such as the location of a freeway, are *wicked*--

In 1973, Rittel and Weber claimed that nearly all public policy problems, like "the location of a freeway, the adjustment of a tax rate, the modification of school curricula, or the confrontation of crime", are *wicked* in contrast with the problems that scientists and engineers have usually focused upon. Some characteristics of *wicked* problems are: 1) there is no definitive formulation of the problem; 2) it has no stopping time; 3) there is no immediate and no ultimate test of solution; 4) there is no enumerable (or an exhaustively describable) set of potential solutions; 5) the problem is a symptom of another problem; 6) its existence can be explained in numerous ways; the choice of the explanation conditions the nature of the solution (Rittel and Weber, 1973).

--and problem selection and framing is not value free

A consequence of this view is that problem selection and framing in policy research is not value free. Arbitrary choices are made which have important action consequences (Innes, 1990).

Different types of research utilization

In policy, the use of research falls into several different types, e.g., knowledge driven, problem-solving, enlightenment, tactical, practical, interactive--

Weiss (1979) proposed the following typology of research utilization (Weiss 1979):

- *knowledge-driven* — knowledge generated by research stimulates new ways of action;
- *problem-solving* — the problem is first defined with basis on practical concerns and the research is then designed to solve it; this mode corresponds to the scientific model of knowledge use;
- *enlightenment* — the decision maker's ideas are framed by the research; this is the most common mode in which social science research enters the political process;

- *tactical* — research is used not to learn or to inform, but to win legitimacy, organize a constituency, or enhance a position;
- *political* — findings are selected for supporting decisions already assumed and for persuading others;
- *interactive* — social science knowledge is combined with experience and insight, as ideas of a variety of individuals are pooled, communicated and changed in such a way that the variety of interconnections and interactions make it difficult to trace the paths of knowledge influence in the process.

--most of which cannot be framed by the scientific model

Weiss' typology of research utilization brought to light the need to rethink the meaning of social science knowledge "use" and to develop explanations of knowledge use in policy. It made clear that such an endeavor could not be pursued within the scientific model of knowledge use, as this model is unable to frame several of the proposed typology modes (Innes, 1990).

The conditions for the influence of research in policy are different for different types of research results, as for data, ideas and arguments

In 1991, Weiss examined "the influence on policy of three forms of policy research: (1) data and findings, (2) ideas and criticism, and (3) arguments or beliefs for policy action." and offers hypotheses about their influence as follows.

Research as data is more likely to be influential:

- in situations of consensus on values and goals
- when two or three alternatives are sharply posed and findings support clear-cut choices
- in rapidly changing situations when nobody knows what the situation is, particularly if they signal that present conditions are not acceptable
- when decision makers (or their staffs) are analytically sophisticated to assess the quality and limitations of the data.

Research as ideas is more likely to be influential:

- at the early stages of policy discussion, when there is latitude for consideration of different facets of an issue and of alternative solutions
- when existing policy is in a disarray, under conditions of failure or crisis
- when uncertainty is high and nobody knows what to do
- in decentralized policy arenas, where authority for decisions is dispersed and simple ideas can travel farther and faster than detailed data.

Research as arguments is more likely to be influential:

- when conflict is high and the different sides have staked out their positions, looking for justifications to strengthen their own cases for reassuring supporters, convincing the undecided and weakening rival positions
- in legislatures, as they are a site for the resolution of ideological and interest-based differences
- after decisions have been made (as legitimation).

Problem defining shapes policy action

Problem solving and problem defining cannot be separated--

Rein and White (1977) argue against the idea of policy research as problem solving. They defend that policy making and the informing of policy making are not freestanding activities, being both part of everyday political action; the researcher helps to create issues and the policy maker helps to define knowledge.

Rein and Schon (1977) contend that it is part of the policy analysis tasks to uncover hidden world views, reveal tacit assumptions and perspectives that underlie problems defined in policy settings, and examine their sources in the culture.

--while the scientific model does not provide rules for problem defining

The literature suggests the inappropriateness of the scientific model of knowledge use in this setting, as it offers rules for problem solving, based on factual knowledge, and not for problem defining, that requires the setting of goals based on values (Innes, 1990).

Legitimacy of ordinary knowledge

Ordinary knowledge is legitimate and central in policy processes

In *Usable Knowledge* (1979), Lindblom and Cohen analyze what kinds of knowledge are involved in social problem solving, concluding that they are not restricted to knowledge produced by social science research. Instead, knowledge involved in social problem solving includes contributions of policy professionals obtained in the exercise of skills or crafts, and *ordinary knowledge* originating in common sense, casual empiricism or speculation, by journalists, civil servants, businessman, interest-group leaders, public opinion leaders, elected officials or thoughtful common citizens.

Lindblom and Cohen (1979) contend that most of the knowledge which appears in the work of practitioners of professional social inquiry is ordinary knowledge and that even much of the "new" knowledge they produce is ordinary knowledge, in the sense that it is produced by the same common techniques of speculation and casual verification, and "is not by any significative margin more firmly verified". They argue for the "legitimacy and centrality of *ordinary knowledge* and casual

analysis in the policy process", observing that professional inquiry has and should have a limited role, even in problem solving (Innes, 1990).

Reflective practitioners and advocacy planning

The *reflective practitioner* and the client cooperatively develop shared understandings, define and redefine problems--

Based on epistemological issues of professional knowledge which are centrally concerned with *design* (in the sense of the process of changing existing situations into preferred ones), as in engineering, medical, law or artistic practices, Schon (1983) advances the idea of the *reflective practitioner,* calling for a close and interactive work relationship of the practitioner with the client, in order that they cooperatively develop shared understandings, define and redefine problems, explore assumptions and create new possibilities until finding a joint solution. According to this idea, knowledge use is highly contextual and dependent of the client's evolving understanding (Innes, 1990).

The possible objects of a practitioner reflection are varied, as they may be, for example, the tacit norms and appreciations underlying a judgement, the strategies and theories implicit in a pattern of behavior, the feeling for a situation that led to adoption of a particular course of action, the way the problem to be solved was framed, the role played within a larger institutional setting (Schon, 1983).

--with the analyst dropping the scientific neutrality pose to assume an advocate role--

The idea of the *reflective practitioner* has connections with the "classical" form of *advocacy* planning, which together with the "activist" and the "radical" make for the three forms of advocacy planning identified by Peattie. In "classical" advocacy planning, "desirable processes of change are arrived at by a more inclusively pluralistic political process which incorporates into decision-making and intervention the ideas and interests of the broadest social spectrum of people concerned" (Peattie, 1978). In *reflective practitioner* roles, analysts drop their pose of scientific neutrality to become advocates for their and other people ideas (Metsner, 1976; Jenkins-Smith, 1982; Nelson, 1987).

In the words of Lindblom:

> Although partisans will use analytical resources only in furthering their own interests, they interact with many other partisans who do the same on behalf of their respective interests. As each feeds analysis into interactive processes for his or her own benefit, at least some of it becomes the common possession of all the participants. Quite possibly, the fabled 'competition of ideas', thought to be essential to pluralist democracy, largely takes the form of exchange among partisan analysts and partisan policy makers who use their analyses (Lindblom, 1980).

--as the *competition of ideas* essential to pluralist democracy, largely takes the form of exchanges among partisans

And

> Democratic political discussion is overwhelmingly partisan discussion. Its effectiveness lies in the frequency with which it turns out that your partisan values and mine, though different, can both be satisfied by one and the same policy. If social science and social research are to be made more fully helpful to public policy, they must enter into that partisan discussion, rather than obscure it with a pretense of neutrality. ... In social research, the principle of nonpartisan pursuit of the public iinterest ... sabotages a competition of ideas. It starves the growing innovating points of desirable social change. By contrast, the principle of partisanship moves in the direction of allying social research with a still unrealized pluralist aspiration (Lindblom, 1986).

Socially constructed knowledge

In policy processes, socially constructed knowledge is more influential--

The idea that more influential knowledge is *socially constructed* appears in a variety of sources and with different overtones. Socially constructed knowledge is the result of the interaction and communication within a group of people while generating, analyzing, criticizing, debating, legitimizing and using data and concepts.

--as reflected, for instance, in social indicators

While studying social indicators, Innes reached the conclusion that "the most influential, valid, and reliable social indicators are constructed not just through the efforts of technicians, but also through the visions and understandings of the other participants in the policy process. Influential indicators reflect socially shared meanings and policy purposes as well as respected technical methodology" (de Neufville, 1975).

Where the opportunity and incentives exist for technical experts, other professionals,

Based on a series of studies conducted between 1977 and 1985 in diverse policy contexts and focused on cases of public policy making associated with requirements to produce and publicly debate quantitative and other professional information,

and policy makers to negotiate over information, all are likely to alter their understandings

Innes (1988b) reports that data requirements offer "formidable weapons to citizens who wanted to challenge decisions"[2]. They also "change the content and structure of the discourse through which perceptions and understandings are formed and out of which formal decisions and actions emerge" and "help legitimize the participation and increase the capability to debate of groups with interests in these topics" (Innes, 1988b). The same field research illustrates that "where the opportunity and incentives exist for technical experts, other professionals, and policy makers to negotiate over information, all are likely to alter their understandings (Innes, 1988b).

Knowledge is developed in a process of interaction and negotiation involving *participant-observer* analysts

Barnes, in the book *Who Should Know What?* (1979), identifies social inquiry as a "process of interaction and negotiation" and argues that social research "depends on the acceptance of a plurality of interests and views within a community" (Barnes, 1979). Research becomes a particular mode of social action with the analyst assuming a participant-observer role (cf. Cicourel, 1964).

Advocacy coalitions

Policy change results from competition of *advocacy coalitions,* with shared beliefs providing the principal *glue* to politics--

On another line of reasoning, Sabatier (1986, 1988) argues that policy change is better understood as the product of competition between several *advocacy coalitions* integrating "people from a variety of positions ..., who share a particular belief system and who show a non-trivial degree of coordinated activity over time". This concept assumes that "it is shared beliefs which provide the principal *glue* to politics" (Sabatier, 1988).

--a view that contrasts with that of the *iron triangles* of interest groups, administrative

This view departs from the more traditional separation of actors by formal institutional affiliation, as in the *iron triangles* limited to interest groups, administrative agencies and legislative committees. It is presupposed that advocacy coalitions are composed of members from a variety of institutions, joining

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[2] US Department of Housing and Urban Development Community Development Block Grant funds in 1977-78 in five California jurisdictions (de Neufville, 1981; Innes, 1988b); US State Department *Country Reports,* describing human rights conditions in all nations (de Neufville, 1982, 1986); Environmental Impact Reviews of four proposals for large-scale, mixed-use land development projects in California (de Neufville and Solloway, 1986; Innes, 1988b).

actors at several levels of government and from different agencies of the bureaucracy with journalists, researchers, interested citizens and others who play important roles in the generation, dissemination and evaluation of policy ideas, or have stakes or opinions about them. They have formed around varied public issues, such as pollution control, disposal of toxic waste, wilderness protection, water policy, land-use, health, safety, highways (Sabatier and Pelkey, 1987).

agencies and legislative committees. They have formed around issues such as pollution control, waste disposal, wilderness protection, land-use, highways

Sustained interactivity

In the same direction goes Huberman's (1989) finding that *sustained interactivity* involving a continuous long-term interaction among producers and users of information throughout the different phases of a project is an effective way to promote knowledge use.

***Sustained interactivity* among producers and users of information is effective in promoting knowledge use--**

Exchanges between producers and users prior to a project aim at relating the scope of the project to the "priorities" or "interests" of the users, involving them in the details of project specification and programming, and at assessing the users' capacity for understanding the results and gaugeing how they should be communicated to be correctly interpreted. Exchanges during the initial phase of the project include definition of procedures for review and analysis of intermediate findings by the users, identification of data sets of greatest potential interest to the users, and agreement on the forms of data flow in internal channels of communication. During the intermediate and final phases of the project, exchanges involve specification of a plan for the dissemination of the project findings, including the roles to be played individually and interactively by researchers and users, the translation of findings into contextually grounded operational forms, the discussion of connections between the study's findings and policies or practices within the user environment that are judged amenable to change, the consideration of issues of significance to the users for which the study has no specific answers (Huberman, 1989).

--by relating the scope of a project to the users interests, gauging how the results should be communicated to be correctly interpreted, defining procedures for review of findings by the users, identifying data of greatest interest to the users, translating the findings into operational forms, identifying questions of significance to the users which the study does not answer

EMERGENCE OF THE INTERPRETIVE MODEL

An interpretive view of knowledge developed, as modern social theory evolved

The failure of the scientific model in adequately explaining knowledge use in policy led to other conceptual frameworks based on an interpretive, rather than a positivist, view of knowledge. This development follows the evolution of modern social theory.

Structural-functionalism

Parson's *structural--functionalism* sees the social world as a system of functional parts that evolve to meet social needs. The most important social processes are the *communication of meaning* between subsystems

From World War II to the mid 1960s social theory was much influenced by Talcott Parsons' structural-functionalism. Parson adopted the metaphor that social systems are like biological systems. The social world was seen as a system which has needs that must be met for its survival, and has several parts which function to meet those needs. As for a living organism, the social system was expected to tend to an equilibrium of balanced relationships between its different parts. Society was viewed as a network of *status roles,* characterized by norms and values, with the most important social processes being the communication of meaning, of symbols and information between the different subsystems (Bernstein, 1978; Craib, 1992).

One of many objections it received was that proper social explanations must refer to *actors* and to *actions*

Structural-functionalism was criticized and reviewed from several different angles (cf., Bernstein, 1978; Craib, 1992). One of the objections is that it fails to provide adequate explanations, giving only descriptive accounts of social systems and their functions, while proper social explanations must involve the reference to actors and actions.

Symbolic interactionism

***Symbolic interactionism* developed on the assumptions that acts are based on**

It is pertinent to mention here the symbolic interactionism school that, beginning in the 1920s, developed mostly in the University of Chicago by pursuing elements of the American philosophical pragmatism, a sociological interpretation of ecology, and the anthropology field methods known as

participant observation. The main assumptions of symbolic interactionism are (Blumer, 1969): 1) human beings *act* towards things on the basis of the *meanings* that the things have to them; 2) these meanings are the product of social *interaction;* 3) they are modified and handled through an *interpretive* process used by each individual in dealing with *signs.* In a certain sense, the social world is assumed to have the same qualities of flow, development, creativity and change as human *conversation* (Craib, 1992).

meanings which result from _social interaction_ and are handled by an _interpretive_ process, as happens in human _conversation_

Phenomenological sociology

An alternative concern with interaction emerged in the 1960s from the phenomenological philosophy that has roots in the work of Husserl at the end of the nineteen century. He argued that scientific knowledge had become divorced from everyday experience and that the connection could be restored through phenomenology.

An alternative concern with interaction emerged from _phenomenological philosophy_

The main stand of phenomenology, in opposition to the naturalistic view, is that the outside world has meaning only through human consciousness. Husserl defends that a phenomenological understanding of the world projected by objective science and of the *life-world* requires the "suspension" of judgment about the *reality* of both these worlds. The question of existence of these worlds is simply put "in brackets" and set aside while we go about describing conscious meaning, and is not to be confused with the epistemological doubt whether world objects really exist.

The main stand of _phenomenology_ is that the outside world has meaning only through human consciousness--

> we have two different things: life-world and objective-scientific world, though of course [they are] related to each other. The knowledge of the objective-scientific world is "grounded" in the self-evidence of the life-world. The latter is pregiven to the scientific worker, or the working community, as ground; yet, as they build upon this, what is built is something different. If we cease being immersed in our scientific thinking, we become aware that we scientists are, after all, human beings and as such among the components of the life-world which always exists for us, ever pregiven; and thus all of science is pulled, along with us, into the — merely "subjective-relative" — life-world. (Husserl, 1970).

--so that knowledge is inherently _subjective_--

—and the substitution of the *life-world* by the *objective-scientific world* is untenable

Husserl claims that the objective-scientific world, with its "idealities" and causality laws, had been taken to substitute the *life-world* which is experienced through perception. In his view the difficulties in accounting for the "subjectivity" of human experience result from adopting a conviction that the "scientific objectized nature" is "the measure of all that is genuinely real".

What is essential is to understand the structures of *meaning* and how both worlds are made *meaningful*

The essential contribution of phenomenology was to bring attention to the general structures of meaning and how the two worlds — the life-world and the objective-scientific world — are made meaningful, while "suspending" any judgment concerning the existential primacy of any of them over the other (cf., Bernstein, 1978; Craib, 1992). A nice way to emphasize this is the observation that

> an activity of marking and counting papers has to bear intentional descriptions which fall within a certain range before we can agree to call it voting, just as the intercourse of two men or teams has to bear descriptions of a certain range before we call it negotiation (Taylor, 1971).

The application of phenomenology to the social domain led to the concept of--

Half a century after Husserl, sociologists applied his argument to social theory, in particular structural-functionalism, pointing out to its divorce from everyday social experience. The ideas of phenomenological sociology have been put forward more forcefully by Schutz, who had been a student of Husserl, beginning with the concept of "social reality" itself:

--*social reality* as including the objects and occurrences, of nature and of culture, *intersubjectively* experienced by common-thinking persons, and involving *intercommunication* and *language*

> By the term "social reality" I wish to be understood the sum total of objects and occurrences within the social cultural world as experienced by the common-sense thinking of men living their daily lives among their fellow-men, connected with them in manifold relations of interaction. It is the world of cultural objects and social institutions into which we are all born, within which we have to find our bearings, and which we have to come to terms. From the outset, we the actors of the social scene, experience the world we live in as a world both of nature and of culture, not as a private but an intersubjective one, that is, as a world common to all of us, either actually given or potentially accessible to everyone; and this involves intercommunication and language (Schutz, 1962).

Accordingly, the meaning of actions must be interpreted in an *intersubjective* context which, in itself, provides the

According to Schutz, human action cannot be understood from a position of outside detached observation of other persons acts. Instead, the meaning of our actions and those of others with whom we interact must be interpreted in a complex *intersubjective* context. This stands on the *postulate of subjective interpretation* which "is to be understood in the sense

that all scientific explanations of the social world *can,* and for certain purposes *must,* refer to the subjective meaning of the actions of human beings from which social reality originates" (Schutz, 1967). "Truth" or accuracy of interpretation is validated through a commonly shared "intersubjectivity", differently from the validation of truth in the positivist model which relies on the supposed correctness of the method used and on the researcher's posture as a "detached observer".

criteria of truth of the interpretation

Each interpretive analysis necessarily bears the personal mark of its author. In fact, Schutz (1967) sustains that traditional epistemological analyses of knowledge, which are dominated by a "spectator", "contemplative", "detached" or "theoretically disinterested" view of knowledge, are inappropriate. In fact, this is not the primary human stance in everyday life since knowledge is oriented toward interaction with the world, and is conditioned by the circumstances of action.

Each interpretive analysis necessarily bears the mark of its author. The *spectator* or *detached* view of knowledge is inappropriate

The view of "social reality" proposed by Schutz had a strong influence in later developments of social theory. In particular, it provided a point of departure for the highly influential book of Berger and Luckman *The Social Construction of Reality – A Treatise in the Sociology of Knowledge* (1967). Its first sentence reads:

A further development of phenomenological sociology led to the influential idea that *reality* is *socially constructed*

> The basic contentions of the argument of this book are implicit in its title and subtitle, namely, that reality is socially constructed and that the sociology of knowledge must analyze the processes in which this occurs.

And further down:

> It is our contention, then, that the sociology of knowledge must concern itself with whatever passes for "knowledge" in a society, regardless of the ultimate validity or invalidity (by whatever criteria) of such "knowledge." And insofar as all "human knowledge" is developed, transmitted and maintained in social situations, the sociology of knowledge must seek to understand the processes in which this is done in such a way that taken-for-granted "reality" congeals for the man in the street. In other words, we contend that the *sociology of knowledge is concerned with the analysis of the social construction of reality.*

Interpretive social science

The interpretive or *hermeneutic* perspective of social science has roots in the work of Wilhem Dilthey by the middle of the

Interpretation stands on the postulate that

the fundamental, irreducible element of human existence is *intersubjective cultural meaning.* So, interpretive social science can be seen as a return to the *objective* world

present century. Interpretation stands on the postulate that the web of intersubjective cultural meaning constitutes human existence in a fundamental way that cannot be reduced to prior speech acts, relations, or predefined elements. Also, the basic social realities are practices that "cannot be identified in abstraction from the language we use to describe them, or invoke them, or carry them out" (Taylor, 1971). The meanings are not subjective psychological states, beliefs or propositions of an individual. They are intersubjective. It is for these reasons that "interpretive social science can be called a return to the objective world" (Rabinow and Sullivan, 1979).

The postulate of *irreducibility* of meaning affirms the primacy of context in the understanding of everyday life

Besides, the postulate of *irreducibility* of cultural meaning affirms the primacy of context in the understanding of social phenomena. "Things only have meaning in relation to the meanings of other things" (Taylor, 1971). This contrasts with the aim of positivist science to replace the "contextual understandings of everyday life by context-free categories" (Rabinow and Sullivan, 1979).

Understanding an action is analogous to *textual interpretation* and judging between interpretations is like *textual criticism*

Ricoeur (1974) explains the interpretive perspective by drawing an analogy between the interpretation of actions in society with the interpretation of texts. In the interpretive approach understanding an action is analogous to textual interpretation, and mediating or judging between conflicting interpretations is like textual criticism.

The *stock of common-sense knowledge* is socially preformed and *socially distributed* so that, when knowledge is used for action, a diversified group should be brought to contribute

Although in the interpretive view an individual's *stock of knowledge* is continually changing, it stands on socially shared common-sense constructs. In this context, it is important to note, as Bernstein (1978) did, that "the stock of common-sense knowledge is socially preformed, and it is also socially distributed". So, when using knowledge for action, it is advisable to take advantage of socially distributed common-sense knowledge by creating conditions for the contribution of knowledge from a diversified group of individuals and institutions.

We cannot know what a phenomenon *is* until we know, what it

One consequence of the interpretive view, where the subjective notion of meaning and socially shared beliefs are regarded to be "constitutive" of social reality, is that "we cannot

know what a phenomenon is until we know what it is believed to be". Therefore, shared meanings and beliefs are essential "data" for any analysis. Accordingly, "the process of knowing and learning engages the expert knower deeply in everyday life" (Innes, 1990).

is*believed to be*. So, shared meanings and beliefs are essential *data*

The objects of interpretive research are the understanding of particular phenomena in their specific settings and in their proper terms. The goal is to make sense of particular, possibly unique, situations through exploratory probing that may be mostly qualitative, and will rarely resort to strict hypotheses testing or measuring methods characteristic of the scientific model.

Interpretive research is directed to particular phenomena and mostly adopts *qualitative methods*

> Knowledge in this perspective is situational, grounded in particular contexts. It need not be generalizable to count as knowledge. Moreover, this knowledge is about whole phenomena rather than simply about relationships among selected variables or facts isolated from their contexts.
> Interpretive knowledge may take the form of a story which can make sense of a complex set of components and link actions to contexts in ways that scientific knowledge cannot (Innes, 1990).

In this perspective, knowledge is *situational,* it need not be generalizable, and it is about whole phenomena. It may take the form of a *story*

KNOWLEDGE IN POLICY ANALYSIS PRACTICE

An interpretive conception of knowledge helps in overcoming the difficulties encountered in the positivist model of knowledge use. At the same time, it provides a setting where integration of knowledge developed in the positivist mode can be naturally accomplished, while accounting for the consideration of the topics raised above under the heading "New ideas for understanding knowledge use".

An interpretive conception of knowledge helps in overcoming the difficulties found in the positivist model of knowledge use

Table II.1 contains a synthesis of the main aspects of the positivist and the phenomenological perspectives of knowledge use.

In fact, the interpretive perspective has a high potential for better linking knowledge to action, when compared with the positivist model, because it (de Neufville, 1987b):

- reflects the world that analysts and policy makers must understand

The interpretive perspective has a high potential for better *linking knowledge to action.*

It provides an integrative view of what analysts really do in *policy practice;* it employs concepts based on ordinary language, provides results in the form of *stories* and deals with *particular issues* and *specific situations,* so that results are more recognizable to citizens and decision makers; it considers *whole problems* without setting aside *values* and *problem definition;* it engages decision makers, executives and citizens in the knowledge production process so they are more prepared to support action based on the results

- deals with particulars rather than universals and is tailored to fit specific situations
- employs concepts based on ordinary language
- focuses on the everyday of the world
- deals with whole problems rather than artificially isolated pieces
- gives direct attention to the understanding of goals and values
- does not require the analyst to emulate the neutrality pose of the scientist
- blurs the distinction between knowledge user and provider as knowledge is partially created through the application of ideas
- involves analysts in working with citizens and policy makers to develop shared goals and beliefs
- intrinsically includes a two-way communication of knowledge between expert and layman
- provides results in the form of stories that can engage beliefs, emotions and values
- engages policy makers, clients and citizens in processes of decision on values, concepts and methods
- leads the participants to feel that the knowledge produced is their own
- permits ideas and findings to evolve along with public perceptions and values
- provides a setting for practical continuous checking against a bias of many professionals for reinforcing the status quo and the views of already powerful interests, in particular if the participation of the least powerful community members is assured.

The analyst can legitimately be simultaneously knowledge provider and user, researcher and actor. Interpretive knowledge is more important in problem defining than in problem solving; more in describing processes than predicting an outcome, more in saying what happens than what works, more in generating alternatives than in comparing them, more in negotiating than in providing simple decision criteria (de Neufville, 1987b).

***Social learning* and *communicative action* provide ideas for**

An important question raised by interpretive research is how can it be assured that the resulting knowledge corresponds to the world of life and action? In fact, one must be sure to adopt

Table II.1 - The positivist and the phenomenological perspectives of knowledge use (adapted from de Neufville, 1987b)

AREA OF CONCERN	POSITIVIST	PHENOMENOLOGICAL
Other names	- scientific	- interpretive
Knowledge	- measurable facts and abstract principles	- development of meaning attached to specific cases
Providers/Users	- distance between knowledge providers and users	- frequently no distinction of knowledge producers and users
Specialist/Researcher	- neutral expert away from the political fray	- cannot be detached observers
Research	- hypotheses testing and measuring	- qualitative and exploratory
Type of questions	- how large is it? does factor X influence it?	- what is it like? how does it work?
Principles	- knowledge is measurable facts which have an independent reality; - facts may be discovered by a disinterested observer applying explicit, replicable methodology; - knowledge also consists in general laws and principles relating different variables; - such laws can be identified through logical deduction from assumptions and other laws and through testing hypotheses empirically under controlled external conditions; - the true scientist will give up his ideas in face of convincing evidence	- understanding the phenomena in their own terms and context; - the goal is to make sense of particular situations rather than primarily to make generalizations; - focus on meaning, accuracy of interpretation attainable through 'intersubjectivity'; - inevitable difference among observers dealt with through consensus building
Objectivity	- sought through a single, supposedly correct method	- sought through reliance on a variety of sources and perspectives
Implications	- information generation and policy choice are distinct; - planner, value neutral expert, distanced from the political fray; - planner's goal is to provide certainty to the policy maker	- information generation and policy choice are interactive - mixed and messy; - planner is part of the whole process and interacts with the policy setting; - planner goal is to provide the basis to create meaning and achieve consensus
Link between knowledge and action	- Little opportunity to link knowledge and action, partially because: • knowledge produced offers poor fit to the world of decision maker • research function is separated from the world of action and motion • simplified, reduced variables are considered under hypothetical, controlled conditions; this is essential to this kind of knowledge and bears little resemblance to the experiential world; - The methods are apt to employ formal, specialized concepts and language different from the policy maker's; - Context is largely ignored in these methods, though it is crucial to planning; - Exclusion of ambiguity and subjective questions often means the researcher cannot study the very issues of central concern; - Politicians uninvolved in the learning process are not likely to feel any proprietary attachment to findings, nor to be convinced their concerns have been addressed	- Provides ways to help link knowledge and action by: • understanding of a particular phenomena in their own terms and context • paying attention to ordinary knowledge and beliefs • having as goal to make sense of particular situations rather than primarily to make generalizations; - Research is qualitative and exploratory; - Analyses of context assume great relevance; - Focuses on the central concern, building insights out of that; - Technicians and politicians are involved in the learning process and are expected to develop shared meanings

enhancing the adequacy of interpretive knowledge to the world of life and action

frameworks and methods guaranteeing that the knowledge resulting from interpretive knowledge is not simply a construct of our minds, eventually concealing important features of the world of life and action (Innes, 1990). Among the ideas for addressing this question we find those coming from *social learning* and *communicative action.*

SOCIAL LEARNING

Social learning* is rooted in the American pragmatists advocacy of *learning by doing.* In this view, the main criteria for validation of knowledge is a *consensus theory of truth

Social learning has its roots in the philosophical school of American *pragmatists,* particularly John Dewey (1950, 1963, 1980) who was a strong advocate of "learning by doing" and argued that all valid knowledge comes from experience — the interaction of human beings with their material environment. The principal focus of the social learning approach is on action. Preferably, the learning takes place in small action groups organized around specific tasks, through interpersonal relations or dialogue and may involve actual problem solving. The criteria for the validation of knowledge is a *consensus theory of truth.*

Goals and problem definition tend to emerge and change in the course of social learning

Goals and problem definition tend to emerge and change in the course of social learning. Frequently, the views held by the participants stand on prior experience, in the form of beliefs, ideas, memories, visions or values supported by peer or reference groups. Often, these views are difficult to change as changes may transcend the cognitive domain and involve affection.

The researcher is a participant in the group involved in *mutual learning*

The researcher or expert knower is a participant in the group rather than a passive observer and must develop a *transactive* relationship with its members conducive to *mutual learning* (Friedman, 1987).

Social learning is: dialogical, collaborative, practical, problem-focused, reflective, creative, emancipatory

Marshall and Peters (1985) enumerate some characteristics of social learning: dialogical, communal-collaborative, practical, problem-focused, reflective and reflexive, normative, fallibilist, creative/transformative, emancipatory. These characteristics pave the ground for a possible development of standards for effective social learning.

COMMUNICATIVE ACTION

In his book *The Theory of Communicative Action -- Reason and the Rationalization of Society* (1983), Habermas sets up a philosophical framework for linking knowledge to action.

According to Habermas, action can be seen from several sociological perspectives:

(1) the *utilitarian* concerning to *beliefs* about a world of experiences or existing states of affairs, and to *intentions* to bring desired states of affairs into existence or change;
(2) the *normative* regarding to cultural values and consensual action;
(3) the *dramaturgical* associated with self-presentation for bringing to appearance something of the actor's subjectivity like desires and feelings;
(4) the *communicative* involving negotiation of common definitions and understandings between people out of their pre-interpretations of the lifeworld.

Action can be seen from several perspectives: the *utilitarian* concerning to beliefs and intentions, the *normative* regarding values, the *dramaturgical* associated with self-presentation, the*communicative* involving negotiation of definitions and understandings

Examples of actions where each one of the perspectives is presupposed are easy to give. The utilitarian perspective is basic for actions directed to the physical world, and also for propaganda, publicity and intentionalist semantics; the normative is widespread in cultural anthropology and content-oriented linguistics; the dramaturgical is present when conveying a personal image to a new acquaintance, to a potential employer or to a citizens audience; the communicative is presupposed in symbolic interactionism, in Wintgenstein's language games, in Chomsky's linguistic competence, in cooperative action.

As a matter of fact, the communicative perspective of action can take into consideration all the other three providing a framework for unifying them in a single encompassing perspective with several overtones.

The communicative perspective provides a framework for unifying all others

The theory of communicative action was developed by Habermas from the assumption that action and communication are so closely intermeshed that their conceptual separation is artificial and inappropriate. In communicative action participants negotiate definitions, values and meaning, trying to reach an

Action and communication are closely intermeshed; participants negotiate an intersubjective

understanding about actions

intersubjective understanding about actions and their very specific outcomes.

Language is prominent in action. It stands on *validity claims* of *truth, legitimacy, sincerity, comprehensibility*

Language has a prominent place in action. To perform its function, a background consensus on its use is necessary. This consensus can be expressed in terms of *validity claims* that can be derived from the four sociological perspectives of action described above: *truth, legitimacy, sincerity* and *comprehensibility.*

As communicative action involves the other perspectives of action, in its case the four validity claims have to be measured against the three worlds of action: *objective world, social world,* and *subjective world*

A speaker claims *truth* for statements or existential presuppositions, *legitimacy* for normative actions, *sincerity* for the manifestation of subjective experiences, and *comprehensibility* for communication. These are the four sociological relations of actor to world presupposed in the social perspectives of action mentioned above. As communicative action involves the other three perspectives, in its case the four validity claims are ascribed both to speakers and hearers who have to measure them against the three worlds of action: the *objective world* about which true statements are possible, the *social world* of normative interpersonal relations, and the *subjective world* of experiences to which the speaker has privileged access (Habermas, 1973, 1983).

Argumentation is the form of assessment of the *rationality of communication* implied by the validity claims

The preceding validity claims are norms of pragmatic communication that in usual contexts are not questioned. However, when the language game is disturbed or the background consensus breaks down, an appropriate form of discourse with argumentation is required to assess the validity claims (Habermas, 1973). Argumentation is a kind of "court of appeal" for the rationality of communication: it makes possible the continuation of communicative action when disputes arise, without recourse to enforcement (Giddens, 1985).

Distorted communication occurs when a political problem is said to be just technical; profit seeking interests misrepresent public benefits and dangers; professionals create unrealistic expectations in their clients

Distorted communication that does not conform to the validity claims mentioned above is rather common, as it occurs

> when politicians or administrators pretend a political problem to be simply a technical one; when private profit seeking interests (such as the nuclear construction or pharmaceutical industries) misrepresent benefits and dangers to the public; when professionals (such as physicians, planners, or social workers) create unnecessary dependency and unrealistic expectations in their clients; or when the established interests in a society avoid humanitarian social and economic policies (such as comprehensive health services) with misleading rhetoric and falsehood, e.g., "the public sector is always, inevitably, less efficient tha the private sector" (Forester, 1985).

CRITICAL THEORY

Critical theory refers to a philosophical contribution that has roots in Hegel, but found its most central figures in the so called Frankfürt School that originated in 1923 with the foundation of the Institute for Social Research. Its most prominent figures were Adorno, Horkheimer and Marcuse. In the words of Horkheimer in his book *Traditional and Critical Theory* (1972), by *critique* is meant:

> that intellectual, and eventually practical effort which is not satisfied to accept the prevailing ideas, actions, and social conditions unthinkingly and from mere habit; effort which aims to coordinate the individual sides of social life with each other and with the general ideas and aims of the epoch, to deduce them genetically, to distinguish the appearance from the essence, to examine the foundations of things, in short, really to know them (Horkheimer, 1972).

Critical theory had its most central figures in the Frankfürt School. By _critique_ is meant the effort to not accept unthinkingly the prevailing ideas, actions and social conditions, to distinguish appearence from essence, to examine the foundations

At the same time, critical theory is seen by Horkheimer to have a practical interest in improving human existence and stimulating change.

It has a practical interest in change and improvement

Habermas devised an ambitious project to provide a sound support of critical theory that none of his predecessors of the Frankfürt School had succeeded in approaching. This project involved subjecting the critical theory itself to analysis by examining its epistemological foundations. A result of this project was the theory of communicative action described in the preceding section. The central concept in Habermas' work for the understanding of knowledge was that of *cognitive interests.*

Habermas subjected critical theory to epistemological analysis and advanced the concept of _cognitive interests_ as central to understand knowledge

In the book *Knowledge and Human Interests* (1971), Habermas stresses the importance of *dialogue* involving three kinds of cognitive interests: *technical, practical,* and *emancipatory.* Each of these cognitive interests corresponds to one social dimension, respectively: *work, interaction,* and *power.* The technical interest is pursued by the *empirical-analytic scientific* method, the practical interest by the *historical-interpretive* method, and the emancipatory interest by the method of *critique.*

Dialogue* involves the cognitive interests -- *technical, practical,* and *emancipatory* -- which are pursued by the methods of *empiricism-analysis, interpretation,* and *critique

It is the emancipatory interest that provides the epistemological basis of critique and critical social sciences The methodological framework that determines the meaning of the validity of critical propositions is established by the concept of *self-reflection*

As Bernstein (1978) points out, "it is the emancipatory cognitive interest that provides the epistemological basis for Habermas' understanding of critique, and the goal of the critical social sciences". In the words of Habermas, a critical social science is concerned with determining

> when theoretical statements grasp invariant regularities of social action as such and when they express ideologically frozen relations of dependence that can in principle be transformed. To the extent that this is the case, the *critique of ideology,* as well, moreover, as *psychoanalysis,* take into account that information about lawlike connections sets off a process of reflection in the consciousness of those whom the laws are about. ... The methodological framework that determines the meaning of the validity of critical propositions of this category is established by the concept of *self-reflection.* The latter releases the subject from dependence on hypostatized powers. Self-reflection is determined by an emancipatory cognitive interest (Habermas, 1971).

***Critique* is central for a new prescriptive model of practice. It demands that the knower question all assumptions, be self-reflective examining biases, take a stance against the status quo, avoid that professional knowledge serve certain interests at the expense of others and be a *tool of oppression.* Critique is connected to freedom and justice**

Innes (1990) states that in her view *critique* is "the central concept for a new prescriptive model of practice". This conviction stems from her earlier conclusions (Neufville, 1983) that *critique* demands that the knower question all assumptions, be self-reflective examining possible biases, be aware of how formal knowledge reinforces the status quo, and take a stance against this status quo. The emancipatory interest requires *critique* to avoid professional knowledge to "routinely serve certain interests at the expense of others" and be a "tool of oppression". Thus, *critique* is intimately connected with questions of freedom and justice (Forester, 1993).

> So a critical theory of public policy leads us first to locate policy implementation in the mediating social infrastructure of action, and second to examine policy-altered social interactions of norms of consent, expressions and trust, and attention or comprehension (Forester, 1982, 1989). The analysis leads, third, to empirical and critical questions probing the degree to which these everyday practical claims are institutionally imposed or conversely criticizable (redeemable, legitimated, noncoercively and generalizably established) through processes of democratic and scientific criticism (Forester, 1993).

DISCURSIVE DEMOCRACY

Discursive designs* locate political institutions in a separate *public sphere

In the book *Discursive Democracy — Politics, Policy and Political Science*, Dryzek (1990) outlines *discursive designs* for political institutions adapted to the critical theory point of view and based on communicative rationality. These institutions are

located in *a separate public sphere between individuals and the state,* to avoid the risk of formalized institutions for being co-opted and absorbed by the state. The participation of individuals should be *as citizens and not as representatives* of the state or any corporate hierarchical body. All concerned individuals must be allowed to participate and should have *open access to information* about the problems to be addressed. It is not necessary that all members participate in all facets of decisions, simply there should be *no barriers to competent participation.* The deliberations should include, but not be limited to, the *interests* of the participants. They should be *oriented to the generation and coordination of actions* within *a particular problem context.* There should be no hierarchy or formal rules, but the debates are to be governed by the informal standards of *free discourse* and *competent communication.* Decisions should be sought through *consensus.* Even without complete agreement on goals and analyses, communicative rationalization enables consensus based on mutual recognition of different legitimate interests.

between individuals and state. Individuals participate as *citizens*. All the concerned are allowed to participate and have open access to information. There are no barriers to participation. Deliberations are sought through consensus and oriented to action within a specific problem context. There is no hierarchy or rules beyond those of *free discourse*

Some "incipient" discursive designs with part of the features just described can be found in situations like *mediation* of civil, labor, international, and environmental disputes, *alternative dispute resolution* as in "informal justice" settings, or *regulatory negotiation.* Dryzek (1990) points out some common characteristics of these practices:

> First, they proceed in the context of a pressing unresolved problem of interest to all parties. Second, that context is characterized initially by a degree of conflict, indicating interaction between divergent ends favored by these actors. Third, some neutral third party (a mediator, a facilitator, or convener) generally initiates, lubricates, and oversees discussions among the interested parties. Fourth, discussion among the actors is prolonged, face to face, and governed by formal and informal canons of reasoned discourse ... [where the] parties involved reconstruct the nature of their relationships ... [and in] some cases, especially international conflict resolution, this reconstruction ipso facto contributes to problem resolution. Fifth, any product of the process is a reasoned, action-oriented consensus. ... Sixth, such exercises are fluid and transient, lasting no longer than a particular problematic situation (Dryzek, 1990).

Some "incipient" discursive designs are *mediation, alternative dispute resolution, and regulatory negotiation*

These practices proceed in the context of a pressing problem with an initial degree of conflict, involve a third party, presuppose face to face discussion among the actors, have as product a reasoned, action-oriented consensus, and are fluid transient exercises

Discursive designs, beyond contributing to problem solving, "expose the deficiencies of established institutions operating in the same area" and "help erode the idea that it is

Discursive designs contribute to expose the deficiencies of

established institutions and help to denounce the exercise of authority except that implicit in a good argument

legitimate to exercise authority on the basis of anything other than a good argument" (Dryzek, 1990).

As noted by Raiffa (1982) a discursive forum enables participants who in isolation have only partial information and control to pool information, coordinate actions and pursue their objectives more effectively. They have the potential to provide collective contributions superior to a simple addition of those separately advanced by individuals.

When a conflict is involved, the articulation of the participants *positions* should be discouraged in favor of their *interests*

In discursive designs, effective problem solving can arise in conjunction with conflict resolution. In such a case, a third party can discourage the articulation of the *positions* of the participants in favor of their *interests,* thus facilitating the emergence of acceptable solutions. The focusing on interests includes the exploration of means to achieve ends trhough instrumental rationality constructs, but discursive designs also allow for the exercise of communicative rationality in relation to normative judgements regarding interests, goals, values, and problem definitions or redefinitions (Dryzek, 1990).

The mainstream policy analysis aspires to instrumental rationality, in technocratic terms. It faces unsurmountable obstacles in modern complex problems. Instrumental rationality is applied in policy at the expense of democracy

As mentioned before, the mainstream policy analysis aspires to instrumental rationality, in technocratic terms. The efficacy of instrumental rationality rests on constructs like analytical problem disaggregation, systems modeling, and integration of different perspectives. It faces unsurmountable obstacles in the highly complex problems which are prevalent in modern policy settings and involve controversial, conflicting and fluid value positions. More serious, however, is that the application of instrumental rationality in policy is done at the expense of democracy, without a critical legitimized questioning of goals, problem definitions and values.

In his book *Planning in the Public Domain: From Knowledge to Action* (1987), Friedman advances a far-reaching argument for the social construction of knowledge that may be at the heart of democracy:

Technical reason, when separated from democratic self-governance, is bound to have destructive

> technical reason, when separated from democratic self-governance, is bound to have destructive consequences. The scientific mind, applied to practical affairs, cannot be trusted to itself: it lacks the "requisite variety"[3] (Ashby, 1956). By serving corporate capital, it is caught up in the vortex of unlimited economic expansion. By serving the state, it works for the economy of destruction. Only by serving people

[3] Ashby's "law of requisite variety" states that "R's capacity as a regulator cannot exceed R's capacity as a channel of comunication".

directly, when the people are organized to act collectively on their own behalf, will it contribute toward the project of an alternative development (Friedman, 1987).

consequences; it lacks the *requisite variety*--

Some of the charges advanced from this point of view against the mainstream policy analysis are that it:

- preempts political debate with the imposition of dubious value judgements, such as economic efficiency;
- treats ends in simplistic form, as capable of being fixed prior to contemplation of a problem and action upon it;
- conceives of politics in terms of the technological manipulation of causal systems by an elite composed of, or advised by, analysts;
- reinforces hierarchical and bureaucratic notions of the control of human beings; and
- posits an unproblematic consensus on values, and so slides too easily into stands on behalf of some ideological status quo (Dryzek, 1990).

--it imposes dubious value judgements, treats ends as fixed beforehand, conceives of politics in terms of manipulation, reinforces hierarchy and bureaucracy, and assumes a consensus on values, giving an implicit support to the *status quo*

Instrumental or technical rationality by itself, standing on the unquestionable acceptance of values and ends, ruling out questions of political legitimacy, pretending to be politically neutral and imune to political influences, can lead to socially unacceptable actions. "Thus a murderous regime may be served in rational ways; murder might be performed not just efficiently but rationally — if this account of rational action is accepted" (Forester, 1993). As Churchman (1962) points out:

Instrumental or technical rationality by itself can lead to socially unacceptable actions

It is simply a mistake to think that game theory, or much of so-called decision theory, is an analysis of rational behavior. The work in these fields is undoubtedly very important, but it has very little to do with our learning about rationality. This is because the problem of rationality is not to define rules of behavior, given the goals, but rather to define rational goals. To relegate rationality to the study of means only is to trivialize it. It is to loose the whole traditional spirit of the concept of rational behavior to say that a man may "rationally murder his friends in cold blood, as long as he structures his choices according to "rational" rules (Churchman, 1962).

It is a mistake to think that game theory or decision theory is an analysis of rational behavior. The problem of rationality is not to define rules of behavior, given the goals, but to define rational goals

The fusion of instrumental rationality and democracy, in a policy making process driven by private interest, expedient compromise and representative government, is problematic. An alternative is a participatory democracy based on discursive institutional designs. The main role of the analyst would be the creation and maintenance of conditions and institutions for free democratic discourse supported with adequate information, in a public space between individuals and the state. Rather than a technocrat, the analyst should be a participant in and facilitator of effective open discourse. Along these lines, and following

The main role of the analyst in participatory democracy based on discursive designs is the creation and maintenance of conditions for free democratic discourse supported by adequate

information, in a public space between individuals and state

Dewey, Kaufman-Osborn (1985) defends that the aim of policy inquiry should be "the generation of a community capable of taking political action" on particular social problems.

Analysts who simply accept concepts established in discursive democracy settings also risk to support the *satus quo*. They must play a critical role--

However, professionals or analysts who simply accept concepts established in democratic discursive settings or generate consensus among participants are likely to contribute for misinformation and support of the status quo. A critical role has to be assumed challenging given knowledge, questioning problem definitions, examining the hidden assumptions in myths and shared convictions, advocating for the poorly represented groups and calling attention to ethics (Innes, 1990).

--in shaping attention to issues of stakes, setting, approach, politics and effectiveness

> By "shaping attention to issues of (1) problem formulation (the stakes), (2) strategy and context articulation (the setting), (3) fact selection and scope (the approach), (4) processes of management, intervention, and implementation (the political positions), and (5) responsiveness and learning (effectiveness), planners, policy analysts, and public adminstrators shape practice (Forester,1993).

Hierarchy fosters distorted communication

It is to be noted that hierarchy fosters distorted communication. In fact,

It can obstruct the free dissemination of information, conjecture and criticism, the incentives being for its use in internal power struggles

> hierarchy can obstruct the free dissemination of information, conjecture, and criticism essential to effective problem solving. The incentives are such that individuals use information as a resource in interorganizational struggles rather than an aid to joint problem solving (see Wilensky, 1967). Those at higher levels use their priviledged command of information to solidify claims to authority. For their part, subordinates release and slant information in a manner designed to put a positive gloss on their performance (Dryzek, 1990).

Hierarchical systems are inadequate for problem solving in a complex environment

In fact, hierarchical systems may be adequate for routine execution and decision making in simple tasks, but "not for problem solving in a complex and variable environment" (Dryzek, 1990).

The reconciliation of rationality with democracy can be done under the banner of communicative rationality. It leads to discursive democracy

Max Weber (1968) believed that rationality in policy implies bureaucratization and hierarchy, strangling democracy and forming an "iron cage" around human existence. He predicted that the increasing complexity of modern society and the rapid development of technology would require an increase and an expanded role of bureaucracy. Ironically, the complexity of modern issues is one of the driving forces bringing into existence alternatives to bureaucratic policy making. The reconciliation of rationality with democracy can be done under

the banner of communicative rationality. It leads to discursive democracy, where there is room for choice based on good cognitive reasons, as well as for instrumental action, but whose streamline is participatory and discursive, and is oriented to a public sphere between citizens and state.

FORUMS, ARENAS AND COURTS

The settings of social interaction in policy processes are: *forums* for the creation and communication of meaning, *arenas* for decision making, and *courts* for enforcing ethical principles, constitutions and laws for resolving residual conflicts

Bryson and Einsweiler (1982) proposed three settings of social interaction in policy processes that are compatible with the requirements of discursive democracy, classifying them as: *forums, arenas* and *courts* (see also Bryson and Crosby, 1992). Forums are the settings for the creation and the communication of meaning; it is in forums that ideas are articulated, discussed and refined. Arenas are the settings for legislative, executive, and administrative decision making; it is in arenas that the practical implications of the ideas emerging from forums are adopted, hammered into different shapes, or rejected. Courts are the settings for enforcing ethical principles, constitutions, and laws for resolving residual conflicts; they provide the ultimate social sanctions for conduct mandated or promoted through policy-making arenas. Refer to Table II.3 for a summary of the characteristics of forums, arenas and courts.

Their design requiress a careful *stakeholder* analysis

For designing effective forums, arenas and courts, a careful stakeholder analysis should be done to answer the following questions:

- Who are the stakeholders?
- What are the goals, expectations, or criteria each stakeholder should want in a problem area and how the stakeholder should evaluate any solution?
- How well does the status quo meet each stakeholder's goals, expectations, or criteria? ...
- How important is each stakeholder to the success of the policy change effort?
- How can each stakeholder influence the policy change effort?
- What is needed form each stakeholder to initiate and complete a successful policy change effort? (Bryson and Crosby, 1992).

STORIES AND MYTHS IN THE CREATION OF SHARED MEANING

The most important interpretive schemes

As mentioned before, the creation and communication of meaning plays a central role in policy processes. The most

for creating and communicating meaning are *stories* deeply rooted in culture. The most powerful are *myths* which link actions to values and to expected results--

important interpretive schemes for creating and communicating meaning are *stories* deeply rooted in culture. In the words of Rukeyser[4], "the world is made of stories, not atoms". The most powerful stories are widely shared and believed *myths;* they are particularly important in defining public problems (de Neufville and Barton, 1987; Innes, 1990).

> Myths provide an important link between knowledge and policy because knowledge that is acted on generally comes packaged with a story (though often one that is not explicit) that has a meaning to the actors and that links actions to valued things and to expected results. The scientific form of knowledge is too abstract to transform directly into practice in a particular situation, or to stir the emotions necessary to motivate change (Innes, 1990).

--provide a way of effectively communicating action proposals in reference to traditional beliefs, simplifying them by the use of analogies, and allowing new policies to carry familiar meaning. But they can also support old-fashioned perceptions and the status quo, concealing important factors from analysis by wraping them in familiar unquestioned ideas

The consideration of myths in policy processes is important for two reasons in opposing directions. They provide a way of translating community values into action proposals, effectively communicating them in reference to traditional beliefs, simplifying them by the use of analogies, and allowing new policies to carry familiar meaning. But they can also give support to old-fashioned perceptions of problems and to the status quo by hiding important factors that are not readily identified for analysis because they are, often implicitly, wraped in familiar unquestioned ideas; a myth persuades by simply accounting for the way the things are and not by linking causes to effects. So, myths "can provide new ways of seeing issues" and point toward proficuous policies, but "they can also blind people to alternative ways of seeing a problem" diverting their attention from possibly better policies. For both reasons, myths must be carefully considered by policy makers and analysts who must critically analyze and publicly expose the assumptions underlying them to evaluate their worth for policy action (de Neufville and Barton, 1987; Innes, 1990).

> Because myths legitimize and rationalize a political and social system, in practice the construction, maintenance, or alteration of a myth may itself become the crucial policy problem (Innes, 1990).

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[4] as cited by Bryson and Crosby (1992)

Table II.3 - Forums, arenas and courts (adapted from Bryson and Crosby, 1992)

	Forums	Arenas	Courts
Definition	A practice of linking speakers and audiences wherein meaning is created and communicated through discussion, debate, or deliberation.	A practice of participation of actors in a delimited domain of activity as part of the process of policy-making.	A practice of judging or evaluating policies or conduct in relation to laws or norms, usually in order to settle disputes.
Examples	Task forces, discussion groups, brainstorming sessions, public hearings, formal debates, newspapers, television, radio, plays, conferences, journals.	Corporate executive committees, city councils, cartels, markets, faculty senates, boards of directors, legislatures.	Court of public opinion, professional licensing bodies, deans' offices, formal courts --- for example, the Supreme Court, military tribunals, traffic courts.
Policy-related role	Maintenance or change of symbolic orders and modes of discourse, especially through distribution and redistribution of access to the communication of meaning.	Maintenance or change of political and economic relations, especially through distribution and redistribution of access to the exercise of power.	Maintenance or change of laws and other modes of sanctioning conduct, especially through distribution and redistribution of access to legitimacy.
Structural properties	A speaker and audience (of at least one) along with a minimum set of common linguistic rules and resources.	A policy maker and at least one other participant in an institutional framework of asymmetrically distributed resources. The policy maker must be able to affect a shared resource base that makes policy-making necessary and possible.	Two disputants and a third party to resolve their dispute, plus at least partially shared norms.
Human action	The use of symbols to create shared meaning and values among participants. Characteristic activity is discussion, debate, or deliberation.	The use of actors' interacting capabilities to secure outcomes through the agency of others. Characteristic activity is policy-making that establishes rules, laws, norms, principles, policies, standards, plans, or prices.	Moral evaluation and sanctioning of conduct, and especially conflict management and dispute resolution.
Ideas, rules, modes, media and methods - vehicles of bias affecting decision and action -	Communicative capability, interpretive schemes, and ways of deciding among interpretive schemes --- for example, relevance, norms of communication, modes of argument, access determinants.	Capabilities and means of mediating among capabilities --- for example, domains; agendas; permitted methods of planning, budgeting, decision making, and implementation; access rules.	Conflict management and sanctioning capabilities, along with differing norms as mediated by jurisdiction, conflict management methods, access rules.
Principles	Principles of signification.	Principles of domination.	Principles of legitimation.
Effect or outcome	A potential list of decisions, issues, conflicts, or policy preferences for discussion. In addition, the mediation between that list and an actual list of decisions, issues, conflicts, or policy preferences to be discussed.	Structural basis for a set of potential nondecisions and decisions about policy, and transformation of that set into actual nondecisions and decisions.	Structural basis for potentially permitted policy decisions and modes of conduct and their transformation into actual policy decisions and modes of conduct that are permitted and those that are not.

CONSENSUAL GROUP PROCESSES

Group processes involving stakeholders, experts, and citizens are playing a growing role in complex, multi-party, multi-issue planning problems--

Group processes involving stakeholders, experts, and citizens in a concerted effort to reach consensus about a particular complex, multi-party, multi-issue problem are playing an increasing role in planning. According to Innes (1991b), these processes are being used for varied purposes: strategic management and strategic planning in business (e.g. Rowe et al., 1989), strategic issues identification and problem solving (Bryson, 1988), integration of science and policy (Ozawa, 1991), dispute resolution (Amy, 1987; Rabinovitz, 1989), community goal setting (Bryson and Einsweiler, 1988). In the words of Innes (1993):

--as responses to the complexity and interdependency of problems like physical development, traffic management and environmental quality, in a *shared power world*

> These consensus building processes have been created largely because of a felt need to coordinate across many entities -- jurisdictions, sectoral agencies and interest groups — to accomplish most physical development and environmental tasks. They are responses to the complexity and interdependency of the elements of these systems and to the inadedquacy of standard top-down hierarchical systems and bureaucratic routines to deal with problems such as traffic management and air quality protection. They are a recognition that the world of the nineties is a shared power world (Bryson and Crosby, 1992). No one agency or player is as capable as in the past of achieving its goals or accomplishing a mission without the cooperation of others (Innes, 1993).

In consensual groups all members are to be treated as equals. They can be run by methods built on the techniques of mediation and negotiation. They are forums where the ideals of social learning, social construction of knowledge, communicative action,

In consensual groups, all members are supposed to be treated as equals and all views are heard, attempting to seek consensus. Typically, they are run by communication facilitators who adopt methods built upon the techniques of mediation and negotiation[5], and provide information, record discussions and agreements, prepare position papers. The knowledge used is not only technical knowledge provided by experts but includes its interpretation and modification, and the social construction of knowledge by the group itself. The design and management of the groups is careful, trying to set up a "microcosm of the larger public debate" with the aim of "building creatively on tensions among the interests". Throughout the process, assumptions can be challenged and problems redefined by the force of argument (Innes, 1993).

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[5] c.f. Raiffa (1982), Susskind and Cruikshank (1987), Fisher and Ury (1992), Hall (1993)

Thus, consensual group processes are a kind of the forums proposed by Bryson and coauthors. They are settings where the ideals of social learning, social construction of knowledge, communicative action, communicative rationality, critical theory, and discursive democracy, as described above, can be sought.

communicative rationality, critical theory, and discursive democracy can be sought.

In *Breaking the Impasse — Consensual Approaches to Resolving Public Disputes* (1987), Susskind and Cruikshank identify three phases of a consensus-building process that can be broken into several items:

- *prenegotiation phase* — getting started, stakeholders representation, drafting protocols and setting an agenda, joint fact finding;
- *negotiation phase* — inventing options for mutual gain, packaging agreements, producing a written agreement, binding the parties to their commitments, ratification;
- *implementation phase* — linking informal agreements to formal decision making, monitoring, creating a context for renegotiation.

Consensus building is reported by Innes et al. (1995) to create among the participants three forms of *shared capital — social, intellectual, and political:*

> Social capital, in the form of trust, norms of behavior, and networks of communication, creates the potential for serious discussion to take place among otherwise conflicting stakeholders. Intellectual capital, in the form of agreed upon facts, shared problem definitions, and mutual understandings, not only provides a common basis for discussion and moves the players toward agreement on policy issues, but allows them to use this shared information to coordinate many of their actions. Political capital, in the form of alliances and agreements on proposals that provide mutual gain, creates the possibility that proposals will be adopted and implemented. This capital lives on among participants even after the group disbands, and it helps to institutionalize coordinated action in the long run (Innes et al., 1995).

Consensus building creates three forms of *shared capital: social capital,* in the form of trust, norms of behavior and networks; *intellectual capital,* in the form of agreed upon facts, shared problem definitions and mutual understandings; *political capital,* in the form of alliances and agreements

The incorporation of the results of consensual groups in policy decisions is, however, problematic. In general, these groups face legitimacy questions that remain unresolved and are poorly compatible with the hierarchical bureaucratic institutions of government. These problems need attention to be solved institutionaly for group processes to effectively contribute to legitimate deliberation and choice (Innes, 1993).

However, consensual groups lack legitimacy and are poorly compatible with hierarchical bureaucratic institutions

GROWTH MANAGEMENT

Problems of *growth management* raise questions of how to achieve efficient land development, secure transportation infrastructure, promote economic improvement, protect natural resources and open space. These are complex problems involving uncertainty and a plurality of agencies, interests and individuals, whose actions have to be coordinated

The problems associated with growth pressures in a world approaching the limits of sustainability brought *growth management* to the forefront of planning concerns. Such problems may raise varied questions, as how to achieve efficient land development patterns, secure mobility through adequate transportation infrastructure, promote economic improvement, assure the provision of needed facilities in a region, or protect natural resources and open space. These are highly complex problems involving uncertainty and a plurality of agencies, interests and individuals, whose actions have to be coordinated. The coordination involves several dimensions, as it must frequently deal with different levels of government (local, regional, state), several agencies and actors whose actions jointly affect a spacial area, varied institutional frameworks of the relevant actors (governments, nonprofit organizations, corporations, unions, individual citizens), extension over time and phasing of the actions (Innes, 1991a; Gruber, 1994; Innes et al., 1995).

Consensual groups have been used in growth management programs which involve conflict among developers, environmentalists and local governments, as the conventional top-down approach frequently fails

Due to the high complexity and difficult coordination in growth management problems, even the definition of the problems is by itself problematic. Consequently, solutions developed by experts in the conventional top-down approach frequently fail. A trend toward using consensual groups is evident in growth management programs adopted in several US states since 1985. These programs aim at balancing economic development with environmental protection, in connection with problems such as traffic increase, air and water quality, urban sprawl, estuaries, wildlife habitats. Frequently they involve conflict among developers, environmentalists and local governments.

They supplement and sometimes substitute assignments traditionally ascribed to experts,

Based on the study of concrete growth management cases, Innes (1991b) reports that consensual groups sometimes supplement or even substitute assignments that traditionally are ascribed to particular actors, such as goal-setting by citizen commissions, analysis by experts, standard-setting by

bureaucrats, program design by consultants or planning staff and even formal policy-making by agency heads and elected officials.

bureaucrats, policy makers

> Group process, if run in a way that empowers and engages the participants, has a dynamic of its own. Members come to care about finding a solution that meets each others' concerns. They put creative energy into the invention of new strategies which may run counter to their original assumptions (Innes, 1991b).

In the same study, Innes (1991b) notes that in a review of innovations in the practices and norms of a wide range of organizations, Rogers (1983) finds that three of the critical factors of success are: compatibility with values and understandings of the players, observability of the benefits, and comprehensibility.

Group processes may also provide the best opportunity to achieve successful innovations in policy

> Successful adoption requires the creation of shared meaning for the innovation and its application (Eveland et al., 1977). Group processes provide the best opportunity to achieve most of theses results (Innes, 1991b).

COMPLEXITY OF ENVIRONMENTAL PROBLEMS

Environmental problems are in general highly complex, as they involve a large number of interactions between a variety of elements. Ecological systems are extremely complex by themselves. To this complexity, that arising from the effects of humans on nature must be added. High population and economic growth leads to an extended occupation of land, higher production of litter and pollution, depletion of natural resources and negative effects on living systems. On the other hand, knowledge about the natural systems is relatively limited, leaving a wide space for uncertainty in the comprehension of the effects of particular conditions, even in the simplest situations that involve the environment. The planning and control of economic growth, land occupation and the resulting increases in traffic, and the understanding and prediction of human behavior regarding the environment involves, by itself, extremely difficult problems.

Environmental problems are highly complex as they involve numerous interactions between a variety of elements. High population and economic growth negatively affect the environment while knowledge about the effects on natural systems is rather limited

On top of the points referred above, one must add to the complexity of environmental problems the variety of human

Besides, a large variety of human

values is involved, related to health, aesthetics, life-styles, ecosystems worth, intergenerational equity. Stakeholders bring to environmental issues a variety of conflicting positions

values that frequently are involved, combining aspects related to human health, aesthetics, life-styles, the intrinsic worth of ecosystems, intergenerational equity, etc. Besides, the success of economic liberalism depends on economic growth, but growth in a crowded world leads to resource exhaustion, pollution and disruption of ecosystems. Thus, human stakeholders bring to environmental issues a variety of, frequently conflicting, positions related to their specific interests or values (Dryzek, 1990).

In USA policy action that involves building major infrastructures has been stymied by nearby residents. No single hazardous waste treatment facility could be built from 1975 to 1987

Alluding to the difficulties faced by policy action in the United States, Susskind and Cruikshank in 1987 remark:

> Almost every effort to build prisons, highways, power plants, mental health facilities, or housing for low-income families is stymied by nearby residents. There has not been a single hazardous waste treatment facility built in this country since 1975, even though everyone agrees that such plants are needed to avoid "midnight dumping" of dangerous chemicals (Susskind and Cruikshank, 1987).

CHAPTER III

CONCEPTUAL FRAMEWORK AND METHODOLOGY

This is an exploratory dissertation. The major part of it deals with framing the issue. The idea is to understand how people use information, why they use it and how they value it in complex environments.

CONCEPTUAL FRAMEWORK

Most people think that if information is not used for a decision it is not used at all. I think otherwise. I think that even if information is not used for the final decision it may make people think, act, take a stand or reframe views. I also think that information has a greater chance to be used by people if there is an interactive process that gives a better opportunity to people to look at the information, talk about it and reflect on it. My belief is that interactive processes create a special dynamics, increasing the opportunity for information to be used.

Having this in mind I constructed the research question:

> **When there is a group process and that group uses information does that information make a difference?**

Therefore, what I searched in this case was: first, if there were group processes; second, if the existence of an interactive way to deal with information made a difference; third, if the

information used in such a setting was more influential than the information used elsewhere and why.

My second concern, that emerged during the research, was about linking simultaneous group processes. What I argue is that if there is no horizontal link, information used in an interactive process may make a difference to the participants of that process but has limited influence outside it. More, if there are several group processes operating simultaneously on the same issue, the lack of some kind of link among them may restrict the influence they may have. So, with this in mind, I developed a second set of questions.

> **Does information developed in a specific interactive process make a difference elsewhere when there is not an overall link?**
>
> **If it does, what factor(s) played the major role(s) in making information to be used?**

Having this in mind it was crucial to decide the type of study to carry on. From analyzing the literature I found out that the best way to construct insights on this theory was to focus on a single case study. That gave me the opportunity of a in depth analysis linking my theory to practice.

WHY THIS CASE

Therefore, my study was designed around a specific case, highly conflictual, with high circulation of information, particularly in the media, and widely debated: the new crossing of the Tagus estuary in the Lisbon region.

> "environmental conflict is already being studied from many angles and in many ways. Perhaps the most common approach is that of detailed individual case histories. The case study method allows the observer to dig deep into the social psychology or political science of a particular dispute, and is thus of great value, particularly from the standpoint of generating hypotheses." (Gladwin, 1987)[1]

What is presented here refers to an in depth analysis of one case study, though some differences and similarities are established and explored having in mind comparison with other case studies carried out by other specialists. This is a good example to look at the role of information because the issue was highly controversial and attracted substantial public attention. If information made a difference that would mean something because there were so many political pressures.

There are several other reasons that explain why a single case study is appropriate:

> First: This is a new area of research. Literature offers a limited understanding of why information is used. To opt for a tightly structured set of assumptions valid for several

[1] Thomas N. Gladwin, Patterns of Environmental Conflict Over Industrial Facilities in the United States, 1970-78, in *Resolving Locational Conflict*, edited by Robert W. Lake, center for Urban Policy Research, Rutgers - The State University of New Jersey, 1987, chapter 2, pp.15.

cases does not seem the best way to construct the insights still missing in this domain. Therefore, while setting the methodology I found out that it was necessary to do a much more in depth analysis, making it difficult to consider another case. I preferred to focus in a single case study, high in complexity and with a richer context, to make the most of it. This choice allowed me to explore the case in greater depth.

Second: If I had much more time available, I might have considered two or three cases. However, each complex case has so many unique features that probably substantial significant details that might be important for the interpretation would be lost in the need of generalization out of comparison.

Third: Moreover, the chosen case — the location of the new crossing of the Tagus in the Lisbon region — is fundamental in several aspects and reveals new patterns in the public decision processes in our national context. I have reasons to believe that this is a prototype of many other cases occurring, revealing key features that are in transformation. It is the kind of case that I want to talk about, because it depends on a lot of technical information and it was strongly controversial, involving competing interests. I cannot generalize from this. Others will have to do additional studies, now that there is more understanding of how these processes develop.

Fourth: This case also presented two other features essential for its selection: the level of controversy it attained and the public attention it caught. In fact, the decision on the location of the new crossing achieved high levels of controversy when an unexpected alternative was taken to respond to the interests of more players. This new alternative was not pursued by the Minister of Public Works and generated substantial conflict drawing a great deal of public attention. This conflict, played a key role in the use of information because people recurred often to information to defend their positions or to explain their option.

The study goes in depth to see the dynamics and relationships of complexity that can give researchers a full understanding of how the process of using or not using information work.

WHAT WAS ACHIEVED

This research allowed me to construct new understandings on a case that has been mostly argued on the basis of technicalities and normative facts. Moreover, it allowed me to identify innovative processes behind the use and production of information. It also identified a need for restructuring new institutions and for restructuring some others by revising their strategies and modes of operation.

Following my study, someone can look at the case and make hypotheses to do further studies, namely through quantitative research. Now, they have the variables to pursue

quantitative hypotheses and assumptions. The qualitative analysis is essential to establish the basis for more quantitative type of approach. This is the right way to do it. When I began, the case was not ready for quantitative methods. Now, after this study, we know what the variables are.

The impact of information gives a bottom line on if information was used. The main contribution of my research is in reformulating issues. Nobody knew how to approach this. This dissertation is a contribution for a little understood area, mostly perceived through qualitative approaches. It also explores the role of technical information in the decision making, somewhat in the line of Innes (1995).

This is a theory building, not a problem solving work. I dealt with a 'wicked' problem[2] to explore how information was used in a highly complex no unique solution context. I could not set it up as a problem solving type of approach, because there was too much complexity and numerous possible solutions. I was able, though, to come up with sensible suggestions of what the researcher need to do to find out what methods in participation and information work best.

MAIN ISSUES BEING ADDRESSED

Locational decisions are not exclusively technical issues

Nowadays, most planners have to deal with complex environments throughout their professional lives. They often have to address problems difficult to define, 'wicked' problems in the words of Rittel and Webber (1973), that are not bound to natural unique solutions. This is particularly apparent in growth management decisions involving location of big infrastructures, specially when environmental concerns are at stake.

> "The nature and intensity of conflict are markedly transformed when debate shifts from technological and fiscal matters to the geographical question of location." (Lake, 1987)

The failure to recognize the several dimensions and the level of complexity and uncertainty of geographical locations frequently results in conflict. According to Lake, these locational conflicts arise due to "the inevitable emergence of unresolved political debates that have been submerged in earlier phases of policy development and facility planning".

> "Location conflicts arise from two false dichotomies that pervade the facility planning process. First, the potential for locational conflict arises from the tendency to separate facility planning and

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[2] In 1973, Rittel and Weber claimed that nearly all public policy problems, like "the location of a freeway, the adjustment of a tax rate, the modification of school curricula, or the confrontation of crime", are *wicked* in contrast with the problems that scientists and engineers have usually focused upon. Some characteristics of *wicked* problems are: 1) there is no definitive formulation of the problem; 2) it has no stopping time; 3) there is no immediate and no ultimate test of solution; 4) there is no enumerable (or an exhaustively describable) set of potential solutions; 5) the problem is a symptom of another problem; 6) its existence can be explained in numerous ways; the choice of the explanation conditions the nature of the solution (Rittel and Weber, 1973).

design decisions from the process of facility siting. Planners, developers, and officials too often engage in an elaborate facility planning process, and only then turn to the problem of deflecting or accommodating local opposition as a discrete policy objective.

The facility planning process contains within it multiple policy decisions regarding local impacts, the spatial distribution of risk, and similar inherent spatial implications that emerge an become manifest in a context of locational conflict. Attempting to separate facility planning from resolving locational conflict ignores the implicit spatial decision already made in the former process.

This is not simply to argue that the obvious point that different facilities have different locational requirements and spatial impacts. It is to say that the *process* of facility planning and the *process* of resolving siting conflicts cannot be disaggregated. The seeds of locational conflict are sown in the earlier round of decision making. Subsequent siting debates simply resurrect decisions that were avoided, ignored, or simply adopt without scrutiny in the course of facility planning. Locational conflict is a political process that demands that these policy decisions be demanded and made explicit.

The second false dichotomy giving rise to locational conflict is attempted separation of 'objective' science from policy and politics. Facility planners and developers too often seek to portray planning and siting decisions based on and objective, scientific process. The process instead is far from objective and value-free but rather contains innumerable political decisions and value judgments." (Lake, 1987, pp. xvii, xviii)

This argument supports that locational decisions are not an exclusively technical problem but integrate several other aspects, such as values, interests, risk. Public locational decisions are therefore far more complex than the technical view is able to reveal.

Alternative approaches offered

The recognition that there is much more to a locational decision process than merely technical issues led several people in the literature to offer other approaches, in an effort to include the multitude of issues involved, the variety of players and the information generated by the different sectors. The call for new approaches grows in urgency as people recognize substantial changes in our contexts (e.g., new ways to see governance, new ways to deal with public processes, new sustainability concerns due to the awareness of limited resources).

Changes in our reality are obvious and have contributed to the increased complexity of the context. The old forms of governance are inadequate to deal with the new pluralism (Drucker, 1989). This is causing the emergence of new institutions and of restructuring public processes in different ways. It is within this line that Drucker discusses the counterculture of the Third Sector as an alternative, and that Bryson and Crosby (1992) suggest the development of forums, arenas and courts as an underlying framework (see literature review).

Innes goes even further suggesting that consensus building is the answer "for dealing with complex, multiparty, multi-issue problems". In her view this differs from other approaches, such as: the pluralist, political free for all, the top-down bureaucratic system of using expert knowledge to implement known goals, the elitist recourse to politically insulated commissions" (Innes, 1993).

On the other hand, environmental concepts have also been restructured along different eco-crisis, and the aim now is the search for sustainability (Harrison, 1993). This greater awareness of the limits to growth (Meadows, 1972) made people realize the need for a balanced environment if life is to have a future (Drucker,1989).

The above makes clear that:

(1) locational decisions are not exclusively technical issues,
(2) the old top-down bureaucratic model is inadequate to deal with all public decisions,
(3) more interactive settings are needed to make better decisions,
(4) the search for sustainability increases the urgency to improve decision processes whenever environmental concerns are at stake.

Exclusively technical approach is unsuitable

Since the case study selected deals with a complex locational decision process, it was clear that the analysis could not be simply restricted to technical matters. It had to encompass the understanding of the complexity of the context.

As stated before, the broader issue of facility planning processes is the result of two distinct types of actions. One dealing with facility planning and design decisions, and the other related to the process of facility siting. While the first may be understood as mostly a technical endeavor, the latter involves a multitude of decisions, including local impacts and spatial implications for residents and other stakeholders. This one can hardly be considered a technical issue in a narrow sense, because it interferes with values and interests of people. Therefore, it calls for a wider involvement of the players with interests at stake. It is a policy decision that has a high potential for generating conflict.

The selected case study deals with the process of a major infrastructure location decision in a metropolitan area. Therefore, the decision had to encompass the values and interests of a group of people suffering directly or indirectly the effects of the various alternative locations. Moreover, the powerful impact of each crossing alternative over the Tagus on land use and on the urban structure has strong effects on the work of several professionals developing land use policies for the area. Therefore, these professionals felt the need of getting involved in the issue. This brought along to the discussion the values, interests and risks underlying their studies. The choice between the several possible alternative locations was not one with a unique solution. It should result from putting together several types of information, considering people's views, identifying the perception of risk, bringing up the stakeholders' interests. To ignore these leads to conflict. Acknowledging the need to include all these factors requires a more elaborate procedure, a kind of a collective answer that can hardly be achieved by a single person, or by a technical team *per se*.

Difficulties with the definition of 'use of information'

We have to look into the 'use of information' in several ways. People perceive the use of information in various manners, for example, information is used because it appears in a document, or because it was argued about, or because it influenced a change of view. Weiss acknowledges that "because the process is so indirect it is not easily discernible" (Weiss, 1977).

In certain situations the users have difficulties in identifying that they are using information. For example, when professionals are directly asked if information played a role in some decision, frequently they fail to mention subtle types of information influence restricting themselves to acknowledge normative use of information (see large scale surveys below).

Moreover, part of the failure of people to sometimes recognize information use comes from the adoption of a too narrow concept of what information is, limiting it to expertise knowledge and ignoring what was identified by Lindblom as 'ordinary knowledge'. In fact, people frequently consider information as specialized structured data leaving out as unimportant all the other knowledge. This ignored knowledge is frequently influential in the way the problem is framed or perceived, and decisions are taken.

Most of the understanding people have on issues was built up along their personal and professional lives and is frequently so ingrained in the subconscious, that making it is rather difficult to be aware of all the information that is in fact used in any situation. For example, there are cases when professionals are influenced and restructure their views on a specific issue. Unless they can either establish a direct link to factual information or justify it based on a technical issue they rarely recognize the influence of knowledge. They may instead justify some opinion on facts that they think credible though they have arrived to that through more subtle and messy ways of information influence. This often results from difficulties in recognizing, or even rationalizing, how they constructed their views along the process.

Furthermore, information can have an influential role even when it is not actively used. Innes (1987b) says that knowledge is more influential when it becomes embedded in assumptions, even if it is not consciously acknowledged. For my case, I am particularly interested on how people changed their views along the way due to the contribution of knowledge.

Little knowledge on the context of information use

Limited insights from large scale surveys

The research on contexts of information use is still in a beginning stage. This is a recent area of research. In particular, it it difficult to draw quantitative analysis when there is so little

knowledge on these problems. Therefore, this area still needs exploratory studies with more qualitative approaches to set the grounds for more structured types of analysis. In fact, the few studies in this area make it difficult to draw specific assumptions to be explored through framed questionnaires. More research is needed to clarify these processes.

The studies conducted by Caplan, Morrison and Stambaugh (1975), Knorr (1976) and Weiss (1977) are some of the few large scale surveys on information use. These studies focused in the utilization of research — such as policy evaluation — in a large number of cases. These authors examined the interaction among characteristics of the research, user expectations and preferences, and the perceived utility of the studies through interviews with the producers and the users of the research. They reported the results focusing on the actor's perceptions. For example, Caplan and a group of researchers at the University of Michigan surveyed 204 executives of the Federal Government, focusing the interviews in the use of specific research studies by the respondents. They expected to find instrumental applications of research findings in decision making. The first reports of the study "Science Is Seldom Put to Good Use by U.S. Officials" (1974) sounded very negative. However, in 1975 the team reheard the tapes and adopted a wider concept of 'use of information' to include social science knowledge other than specific data or research conclusions. Broadening of the scope of the concept of 'use of information' gave new insights: 85% considered that "the social sciences can contribute a great deal to the formation of intelligent policy" and 87% that "government should make the fullest possible use of social science". This shows a positive attitude towards social science research influence at the same time as acknowledging the lack of instrumental use of knowledge. One of the main conclusions of this study was that the interactions between technicians and politicians was unsufficient. However, it did not provide much insight on how and why information was used.

Others, like Caplan and collaborators, used the rational model (questioning people about instrumental application of research findings) in similar analyses (large scale surveys), and they did not get very far. People interviewed saw themselves not using information, but they valued it, and could not explain why.

Knorr (1977) interviewed 70 government officials from federal, provincial, and city governments in Vienna, and sent 600 questionnaires to Austrian social researchers. She was searching for identifying symbolic use of research, convinced that government officials employed research to legitimate bureaucratic activities. Instead, Knorr found that research influences changes in bureaucratic thinking in subtle ways. Out of 58 government officials sponsoring social research, 65% said they had changed their opinions to some extent and 43% reported moderate or strong opinion changes. The use of research was more in changing the views of the decision makers, than in determining the final decisions.

Weiss conducted a study with a Columbia University team to identify characteristics of research studies that enhance their use. They carried out interviews of 255 decision makers about their opinions on abstracts of reports given to them for reading during the appointment. They asked interviewees about the potential usefulness of the reports for their work and the most appropriate use of that research. They also asked them to identify the characteristics of each study along 26 dimensions[3]. The survey shows that the decision makers identify "likelihood of use" and "conceptual usefulness" of the information considered. The researchers also collected opinions on what makes some studies more useful than others. According to Weiss (1977), the results of the studies suggest that decision makers value "controversial research, challenging research, research that makes them rethink confortable assumptions". She concluded that knowledge influences decisions through gradually changing concepts, insights and assumptions over time. This influence is observed in two ways: by confirming things policy makers already suspected, but could not state with confidence, or by making them see issues in a new way (Weiss, 1977).

From these three surveys, it is obvious that research conducted on knowledge use assuming that it is consciously and deliberatly used for specific decisions on the rational model have substantial limitations. A better understanding emerges when the researchers adopted an approach that allowed other concepts of information use to emerge in the interviews. Caplan's first report was rather inconclusive. His results were far more substantial when he broadened the concept of information use. Knorr, though looking for symbolic use, came to recognize that "research sometimes permeates decision making", mostly in the "'preparation' of decisions" rather than in making decisions (Weiss, 1977). Weiss developed the idea of the enlightenment function of knowledge. She identified the subtle influences of knowledge showing how it equipped policy makers with a new perspective on a problem and a new way of approaching it.

One of the reasons why insights on knowledge use were limited was that the researchers were mostly focusing on the effects of measurable variables at moments of decision. Little was explored in terms of the context in which the information was used. Other researchers began to focus on knowledge use in problem definition. These researchers applied a qualitative phenomenological approach to the research.

Overall, what this shows is that more adequate forms of research on knowledge use can be developed if we move to understand the use of information in specific contexts perceiving it as influencing users in a more subtle way through changing their final decision. Frequently, the users themselves are unware of the influence. By moving away from analyzing only "direct

[3] The study conducted by Weiss revealed that research quality (technical quality, objectivity, consistency), conformity to user expectations, action orientation (practical implications and feasibility), and challenge of the *status quo* are factors that impact positively on usability, the first two providing a basis for trust in the research and the two others offering a sense of what to do (Weiss, 1976).

links between data and decisions" and focusing on the process and less visible influences of knowledge, researchers brought new potential to studies of knowledge use. Since my study involves looking at effects of information that users are unware of using. I could not understand the problem if I had a closed view on the issue.

Theories of knowledge use in decisions

The literature on research conducted on the use of information reports three main explanations for why knowledge is not used:

(1) the partisan view that knowledge is selectively used to support previously taken positions;

(2) the two worlds view that knowledge is irrelevant because the technical and political contexts operate with divergents assumptions, problems, variables and temporal scales, so that technical knowledge is irrelevant to the political settings;

(3) the enghlightnment view that says that knowledge is used because it subtly influences without being directly used.

The two first explanations simply describe reality, giving little room for innovation and exploration about the use of knowledge. However, the enghlightnment function (Janowitz, 1970; Weiss, 1977) brought a new potential for exploring the reasons why knowledge is used. And it is with this approach in mind that I designed my methodology, building as well on more recent work developed by Innes (Innes, 1995) .

The methodology used for research had to take into account three key challenges:

(1) difficulty of defining the use of information in a too restricted way that could lead to substantial limitations in analyzing the context;

(2) limitations of people in recognizing when they use information in its different forms;

(3) little knowledge of researchers on the contexts determining information use.

Information in planning

Traditional model of planning

Before describing the interpretive method, let us look into the different stages of information in planning, as described by Innes (1995). According to the instrumental model, the handling of information viewed exclusively as quantitative data framed in "countable units", or formalized in studies and reports "based on calculations and scientifically validated knowledge", involves three stages (Innes, 1995):

First stage: Generation of information — Experts develop information, at the request of the decision makers, to answer questions or to address specific problems. The planners are expected to produce analyses, select and interpret data digesting it in an understandable form and offering professional opinion about the "validity and implication" of the studies.

Second stage: Use of information — Decision makers use information to make decisions.

Third stage: Gathering and analysis of more information — The implementation of the decisions leads to more information, that is analyzed for the following phases.

The legitimacy of planning was traditionally built essentially on the "ability to generate analyses, use information, and help decision makers to use information" (Innes, 1995). According to Innes the instrumental model of knowledge use is based on several assumptions:

(1) information generation is the function of a value-neutral expert and policy choice is the responsibility of the decision maker. Therefore, these are distinct activities carried out in separate spheres;

(2) attention is focused on measurable objective facts, avoiding the ambiguities related to values and interests;

(3) emphasis on abstract laws by the value-neutral expert favors the search of generalizable principles, rather than the understanding of particular situations. Generalized principles however, are not very useful for specific decisions.

This instrumental[4] model of knowledge use has a role to play in public policy, but several conditions have to be met in the policy arena:

(1) players should have enough knowledge of the context to understand the underlying hypotheses;
(2) values and goals should be explicit and either unitary or not conflicting;
(3) research should be completed before changes occur in goals or conditions;
(4) findings must be operational (suggestions for action);
(5) the analysts are accepted as providers of accurate information (Innes, 1987, 1995).

After enumerating the necessary conditions to be met, Innes concludes that "it is perhaps unsurprising that those who use this traditional model of knowledge seldom can identify effective applications" of it. However, she points out that this model has more appropriate application to some tasks, such as fact finding under known conditions, problem solving with well defined variables, comparing alternatives under established criteria. In sum, the traditional

[4] Also called positivist/scientific.

model operates effectively under certainty. However, uncertainty about technology and goals is far more common in planning situations.

Challenging the traditional model of planning

If planning is understood as communicative action (Sager, 1994; Forester, 1989; Innes, 1995; Healey, 1990), then the research on practice "contradicts the analyst model of planning" (Innes, 1995). Literature is full of examples where formal information has only partial influence on decisions (Caplan,1975; Weiss, 1977; Knorr, 1976) and of complaints that expert advice is ignored in the decision (Vasconcelos, 1993) or is only used to substantiate an already taken decision. The neat process of instrumental rationality[5] described above is challenged, since it fails to translate a messier reality where all the above mentioned stages "merged to be indistiguishable" (Innes, 1995). Moreover, it also fails to uncover unanticipated processes, or hidden knowledge and its effects (Innes, 1987).

The old model offers limited opportunity to identify subtle types of knowledge use. Since, "enlightenment" (Javonitz, 1970; Weiss, 1977) and "invisible" (Innes 1995) knowledge are identified to be more influential in policy decisions, the instrumental model is not a good choice as a framework to my research.

Opting for the phenomenological view

I consider that information is used when it makes a difference. When people look at it, talk about it, think about it in the light of a problem. The interactive processes give the participants an opportunity to explore these ways of information handling. While participating in them, the players are likely to reformulate their views and to generate new ideas. Frequently, these interactive settings favor creativity. I am interested in the use of information in these settings. Particularly, when it influences the way people think about the issues, the generation of new alternatives, or changes in opinions. It is a more subtle use of information that attains powerful meaning among participants and brings up change. It is a type of information use strongly related to the underlying context.

If this is the case, then a phenomenological qualitative approach to research is a natural form to look into knowledge and has a greater potential to build up better insights than the just a quantitative study that cannot by itself uncover stories and meanings. In this view, knowledge results from the understanding of a particular phenomena within a specific context. It is built on ordinary language and incorporates people's beliefs and intentions. It makes sense out of particular situations rather than generalizations (Innes, 1987).

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[5] "goal and problem identification, analysis and alternative generation, evaluation, choice and implementation" (Innes, 1995).

The phenomenological approach is qualitative and exploratory. It searches for answers to questions such as "what is it like?", and "how does it work?", rather than "how large is it?" or "does factor X influence it?". Most of the research is critically built on interpretation of stories told by the actors involved. The main function is to search for invisible forms of knowledge (Innes, 1987) that influenced in a subtle way.

Meaning and intention, as viewed by the actors, are the main focus of phenomenological research. Thus, this approach is completly different from the positivistic. Researchers rely on their subjective capacities to understand, putting themselves on the place of others (Innes, 1987). Moreover, objectivity is drawn from a variety of sources and perspectives, rather than "one single correct method or an effort to observe without bias". (Innes, 1987).

The type of research questions that interest me fit better the interpretive model of research rather than the instrumental. First, because I am interested in knowledge use dependent of specific contexts. Second, since my questions stress the understanding of a process, this is a more adequate option. Third, my main focus is in drawing out understandings of why and how information was used, through the way players saw the issues, talked about them and argumented using information. Participants' stories of the process represent a key feature of my analysis. Furthermore, the interpretation of these stories depends from the context within which they occurred. Since the phenomenological method is built on interpretation of stories whithin specific contexts it is this method that fits my purpose.

The literature says that a way to capture the essence of a setting is through storytelling. This is particularly suitable to analyze complex contexts due to the potential for uncovering hidden untold pieces of the process and glueing them together.

> "We argue that thinking about stories in our data can enable us to think creatively about the sorts of data we collect and how we interpret them. Using examples drawn from our anthropology data, we try to emphasize that stories our informants tell can be seen, on one hand, as highly structured (and formal) ways of transmiting information ... The collection of stories and narratives in qualitative research extends what Riessman (1993) calls the 'interpretative turn' in social science ... Denzin describes a narrative as a story of a sequence of events that has significance for the narrator and her audience." (Coffey and Atkinson, 1996).

In fact, story telling proved to be an appropriated method for my research, since my interests focused in the process and in revealing its interpretation. I listened to the stories of players in the case because it was through the story each one told that I was able to understand their way of seeing the issue at stake, and to refocus my questions to fit what seemed to be their understanding of the process. This procedure revealed to be a powerful tool for achieving substantial knowledge for the research.

Planning as an interactive activity

Theorists claim that "planning is best understood as communicative action rather than analysis for decision makers" (Sager, 1994; Forester 1989; Innes, 1995; Healey, 1990)[6]. Therefore, I am using Judith Innes method constructed out of the understanding of planning as an interactive activity and assuming that planners are "engaged in a range of communicative activities that result in public action" (Innes, 1995)[7]. This method has been very useful in shedding light on issues related to the processes of use of information from a communicative perspective. This implies a new view of the role of information, abandoning the traditional "delivery of unbiased, professional advice and analysis to elected officials and the public who, in turn make decisions" and focusing in "the role of information in the deliberations" (Innes 1995). Additional attention is given to the way technical information is developed and used within a variety of settings. Recognizing that planning is essentially an interactive activity, I used an exploratory model to conduct research in these contexts. I look at planning under a communicative view in order to understand the evolution of the way the information was viewed by players along the process.

Discussing the need to link planning theory to practice — "bridging the gap" — as a way to overcome the "crisis" of theory failing to provide a "satisfactory mesh with experience", Innes defends a phenomenological and critical approach as a way for "understanding neglected but critical problems", such as "the interactiveness of knowledge generating and using processes". The remedy suggested is a mix of descriptive, predictive and normative approaches grounded in empirical research of planning practice, primarily qualitative and storytelling[8].

Knowledge in interactive processes is constructed by the users involved through a social process. It becomes part of the story translating meaning and understood by the actors (Innes, 1987). This makes the storytelling approach appropriat to the research in this area.

Defining 'use of information'

My interests are not in how much knowledge played a role in the final decision on the political context, but how it influenced the players. This came out of my conviction (supported by the literature — Weiss, 1977; Innes, 1987b) that knowledge influences without being actively used. Moreover, the "intellectual capital" being build along these conflicting, highly debated processes has a deep influence in the amount of knowledge circulating and in the

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6 in Innes, 1995.

7 Innes, J. The Role of Information in Communicative Planning, paper presented at the Annual Conference of the Association of European Schools of Planning, Glasgow, Scotland, Aug. 16-19, 1995.

8 de Neufville, J. I. Planning Theory and Practice: Bridging the Gap, Institute of Urban and Regional Development, University of California at Berkeley, *Working Paper 402,* April 1983

restructuring of the public processes. Therefore, my analysis focuses on the influential role of information.

The central idea was to draw insights from how people see information and how they use it to justify specific views, stands or opinions. Furthermore, I was also interested in understanding what changes occured in the views of people and how people put information together to make sense of it. The meaning that information acquired along the process represent a substantial part of the research. The reason is that information acquires meaning and powerfully influences change by being used.

For my purpose, information is important when it influences, when it makes a difference. I define use of information as a process where any data, event, fact, knowledge, research influenced the perception, views or actions of people. This means that important information changed people's views, made people see an issue differently, or led to the reformulation of an argument.

Having this concept in mind I developed a list of key variables to operate as a research framework: (1) information influence, (2) evidence of knowledge use, (3) degree of controversy, (4) inconsistency of objectives or arguments, (5) multidisciplinary, (6) diversity of perspectives, (7) degree of technical agreement among experts, (8) degree of stakeholders representation, (9) degree of fitting between information and problem frame, (10) degree of information discussion and change.

(1) Information influence

This category results from the conviction that a way to identify knowledge use is to find ways users may be influenced by information[9]. For example, how it:

- makes them ask the right questions
- changes the way people think about a problem
- makes people see a problem in a different light
- becomes part of a standard, or indicator
- gives power to one of the parts involved
- solves a dispute, or a problem
- changes the opinion about an option, or policy
- brings unexpected powerful evidence into consideration
- supports an argument
- legitimizes positions
- makes some players become noticeable
- generates need for more information
- makes people accept a problem definition
- prioritizes issues.

[9] It is a surrogate way to know that people used data.

(2) Evidence of knowledge use

This is related to more direct types of information use. It refers to clear types of knowledge mentioned in different settings. This variable aims to identify information being used for a specific reason, such as:

- because it is mentioned in a report
- because it is debated
- because it influenced change of an opinion or a view
- because it was used in an argument.

(3) Degree of controversy

This refers to the degree of controversy as evaluated by the level and frequency of conflictual or opposed positions expressed in:

- articles in the media
- press conferences
- meetings
- position papers
- interviews
- TV debates
- arguments.

(4) Inconsistency of arguments and objectives

This lists situations of inconsistency that may leave room for reformulation of an issue. It is closely related with problem definition and with the way each person sees a problem. It can be applied to identify the various views in debate, and the assumptions behind them. Examples:

- contradictory arguments
- incompatible objectives
- ambiguity of objectives
- partial argumentation (e.g., traffic engineers left out most factors).

(5) Multidisciplinary contributions

This identifies knowledge commitments analyzed through the insertion of players in different disciplinary of professional sectors, in particular

- players backgrounds
- players agencies
- players professions.

(6) Diversity of perspectives

This variable identifies arguments connected with the different perspectives people have on an issue or on related issues. This gives us information on the lens people use to see the situation. Examples:

- different images players have on issues
- different types of rationales expressed by players.

(7) Degree of technical agreement among experts

This measures the level of consensus of specialists on technical information being debated. It also identifies the type of information that assumed greater relevancy in the process. Examples:

- arguments of experts by explicit mention to facts justifying a technical argument
- reference of players to specific technical data to make a point or support an argument.

(8) Degree of stakeholders representation

This variable aims to identify if the key players got involved. Leaving out players may be a reason for conflict to occur. Examples:

- stakeholders involved *vs* important stakeholders
- technical-professional and policy entities involved.

(9) Degree of fitting between information and problem frame

This category deals more with the adequacy of the information and the process, and identifies missing pieces. Examples:

- does information respond to the questions asked?
- what are the tools to reach the decision and is there information to address it?

(10) Degree of information discussion and change

Drawing from the existing debates this variable identifies changes occurred in the information along the process. Examples:

- changes on how people expressed their views on the issue
- changes on the way people argued about the issue
- patterns of arguments and explanations of specific issues and their changes over time.

My interests are in what information influenced the players, how and why. I soon realized that information use could not be defined in singular terms because that would limit my inquiry. It was clear that a structured questionnaire to research on how, why and what information is used, applying quantitative methods, offered limited possibilities. This would also leave out considerable possibilities of building new insights on how knowledge influences and is influenced. I had, therefore, to turn to qualitative methods. The impossibility of building up a one-dimensional definition of use of information, associated with the awareness of frequent failure of people in recognizing that they used information, led me to choose qualitative methods such as intensive interviewing, transient observation, and document analysis, as better devices to attain my purposes.

In fact, the interpretive approach provides a more adequate framework to understand "particular phenomena in their own terms and contexts", "making sense out of particular situations"[10] (Innes, 1987). Since little understanding of these processes of generation and use

[10] de Neufville, J. I. Knowledge and Action: Making the Link, *Journal of Planning Education and Research,* vol 6, number 2, Winter 1987, pp. 88-92

of information in complex environments is offered by the literature, it is essential that further research be done before they become ripe for more structured types of analysis.

WHAT WAS DONE

The complexity[11] of locational decision processes and of the research questions considered call for a qualitative in depth approach, because:

(1) this is a theory building dissertation

One of the important objectives of my research is theorizing about the use of information in complex issues. Qualitative analysis is adequate for this purpose building ways of thinking with data, for "going beyond" the data to develop ideas (Coffey and Atkison, 1996). This is my main objective in this dissertation.

(2) it deals with complex environments

Qualitative analysis is suitable to deal with a "complex network of events and processes" as it allows the researcher to identify mechanisms that go beyond a mere correlation of facts (Miles and Huberman, 1994).

(3) it analyzes multiparty, multi-issue settings

Qualitative analysis gives greater opportunity to consider a multitude of views, issues, positions and settings.

(4) it deals with qualitative and exploratory knowledge.

Since the questions of the research deal with the understanding of an issue (e.g., what it is like) and a process (e.g., how it does work), qualitative analysis, built critically on the interpretation of stories told by the actors, offers substantially more possibilities than quantitative analysis, which puts too much emphasis in abstract laws and generalized principles categorizing respondents answers. Therefore, analysis is conducted on a single case that due to its characteristics, is a paradigmatic example — the decision on the location of the new crossing over the Tagus in the Lisbon region. This single case is representative of the main key features of complex public decisions in Portugal nowadays. It is my conviction that the in-depth study of this specific case will bring into the open key factors of these complex processes and will shed light on the main mechanisms involved. Findings will be valued for telling us about the use of information, the clarifying of the context of public decisions, and providing ideas for new forms of public decision making institutions.

The definition of the research objectives supported the development of a list of the variables to work with (see above -- defining use of information). This gave me the

[11] explained earlier in this section and in the literature review sections

framework to develop the interview guiding questionnaire (Appendix I). I opted for open ended interviews and, therefore, this questionnaire only represents a frame of reference to be adjusted as the process moves along. The interviews were conducted in conversational style and the respondents often brought up issues that I had not anticipated and which proved to be important for the study.

The field work was structured in five phases, each one of them with specific objectives:

Phase 1 - Construction of the factual history of the location of the Tagus crossing. It included the development of contacts with identified key participants and main sources of information.

Phase 2 - Exploration of controversial explanations provided by respondents and collection of a more in-depth understanding of changes occurring due to the circulation of information.

Phase 3 - Interviews of key participants to obtain insights for understanding the case and for building up the context.

Phase 4 - Checking of unclear aspects raised during the interviews and validation of the constructed story, by conducting additional interviews and further document reviews.

Phase 5 - Preparation of the complete case history. Analysis and development of findings.

Most of the information was collected through intensive interviewing[12] (see below). However, I also used transient observation[13] of participants in debates (see below) to complete and confirm the information, as well as document analysis[14] (see below) for collecting most of the written data.

Interviews

I began by identify key actors in the process, based on my preliminary knowledge of the issue, knowledge of a key participant, written documents of several entities and public information coming out in the media (e.g., newspapers, radio, TV). During the field work I identified other people to interview, based on the information obtained in previous interviews. This process of identification was an ongoing process leading to a closed circle.

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12 "open-ended interviews ... unstructured, semistructured, nonstandardized, in-depth, elite, exploratory, journalistic, intensive" (Murphy, 1980).

13 "the transient observer observes without disguise, is clearly an outsider, and, is faced with tight time constraints" (Murphy, 1980).

14 "document analyses is better than interviewing for collecting some kinds of retrospective data" (Murphy, 1980).

Most of the selected interviewees belonged to the technical community. The criteria used for the selection were:

(1) being identified by another participant (I identified most of the interviewees this way),

(2) belonging to an institution directly or indirectly related to the process,

(3) being a representative of a stakeholders groups (such as, member of an interest organization, member or consultant of the GATTEL, professional working for a municipality),

(4) being an individual or belonging to an institution with a relevant role in the process,

(5) being deeply involved in the process.

I interviewed players with different degrees of involvement who entered the process at different stages. With some key participants I kept a continuous contact throughout the study in order to confirm or understand further information I was collecting (such as dates, chronology, or restricted events). Whenever a key individual was not interviewed I made sure that information from other participants, or written documents, covered for the gap and provided good enough information. Occasionally, I also resorted to interviews in the media (newspapers, TV, radio) for additional data on the participants I did not interview.

I concentrated in getting the accurate history of events, in identifying why this process was different from other public processes and up to which extent there existed similarities, what type of information influenced or did not influence, type of changes that occurred in the participants positions, or in the way the process was carried out, and why they did occur.

The interviews focused on:

- getting the chronology of the events;
- understanding how, when and why people got involved;
- identifying the type of player and level of intervention in the process;
- identifying changes of views of the players during the process;
- finding whether different types of information (facts, events, data, past understandings) influenced changes;
- identifying information considered important by the participants but which did not achieve attention (or just received little attention) in the process;
- identifying the information that, though considered irrelevant, achieved an exaggerated importance in the eyes of the player;
- determining specific meanings given by a player to a particular type of information;
- collecting information on strategies of action and their changes;
- comparing the similarities and differences relative to other public processes;
- understanding the way the actors defined the problem;
- figuring out how the process was set up (procedures).

Most players had only a partial knowledge of the story concerning either a period of time or a specific part of the process. Moreover, since this was an ongoing public decision some reticence was expected from the interviewees, contrary to what might happen with already accomplished processes.

The interviews were mostly carried on face to face, with an unique individual, though in a few cases there were two to three individuals together and the interview assumed the form of an informal meeting. These instances were useful because interactivity among previously acquainted individuals brought up issues not approached in the standard interview setting.

In procedural terms, the basic idea was to let people tell the story of their involvement in the process and their understanding of information, and to look at the interrelations among the different actors. The advantage of this method was the possibility to explore with the interviewees the parts of the story that were relevant to them, upon which they had already reflected and advanced explanatory ideas. This procedure had more potential to build up insights, clarifying the unknown story behind the decision process.

The interviews were later typed out. Whenever I felt the need of further explanation or correction of doubtful points, I solicited additional comments and feedback from the interviewees. When the account of stories and perceptions differed among respondents, I tried to clarify the accounts. Finally, I offered my own interpretation on unmatching views. Stories told by the different players were critically analyzed and interpreted, giving special attention to contradictions and differences that came up. I often confronted some of the players with controversies to get a more throughout explanation. The use of written documents (see below) contributed to further clarify some of the more complex issues. I also constructed a comprehensive story making sense out of the pieces and stories collected.

A total of 40 individuals were interviewed. More than 3/4 of the interviews were conducted during 1993 and 1994. The remaining ones were evenly distributed by 1995 and 1996. Some individuals were interviewed at different stages of the process and some of the interviewees had overlaping roles (for example, the same individual could be an environmentalist and also a municipal technician). Of the total of the interviewees:

- 6 were members of the GATTEL
- 5 were consultants for the GATTEL
- 13 were environmentalists
- 16 belonged to the public administration (I excluded from this category individuals working at public universities and research institutes)
- 9 were municipal technicians
- 8 were urban planners
- 5 were transportation planners
- 3 were politicians.

This group was selected with the aim of assuring a reasonable diversity.

Transient observation

The period of the study was mostly the period between the decision to pursue a second crossing of the Tagus in the Lisbon region and the decision of the Council of Ministers. However, to understand the story I had to dig into the background history. Since this case involved substantial conflict, it received a lot of public attention long after the Minister of Public Works decision. Therefore, I could further follow up the process and build up my own interpretation through the observation of the different actors in the debates, either technical, public or in the media.

Document analysis

The people interviewed supplied part of the documentation. I also got written documents directly from the institutions producing them, associations of interest, colleagues and libraries. I classified those documents and organized them for reference and comparison with the information obtained from the interviews.

The GATTEL Documents were collected at a very early stage. Meeting minutes, memos, technical statements, plans, policy documents or legislation related to the issue were also assembled when available. This proved to be extremely useful for setting up the chronology of events (Appendix II) and building up the historical background. Moreover, it also shed light on the conflicting issues and positions of the different actors — either institutions or individuals.

I also used news (Appendix III) from the media as a reference. They were, however, mostly important in figuring out the peaks of conflict and the argumentation made public. This also helped in certifying the chronology of events and identifying the tone of the conflict. Frequently, they also provided the understanding of specific arguments of some players.

CHAPTER IV

A COMPLEX CASE IN GROWTH MANAGEMENT — LOCATION OF A NEW BRIDGE OVER THE TAGUS ESTUARY

INTRODUCTION

The Council of Ministers decided in 1992 to locate the second crossing over the Tagus estuary in *Sacavém-Montijo.* "Never has a public work of such a dimension generated so much debate nor led to such a controversial solution"[1]. One of the opponents even called it the "error of the century."[2]

It was the extensive planning and transportation activity going on in the region that created the context to make this process unique. In fact, at that time several plans and projects were under way, namely the redefinition of the strategic policy and the development of planning and transportation guidelines for the municipalities and the metropolitan area. Some of these plans covered parts of the region (e.g., Peninsula of *Setúbal*) and others encompassed the region as a whole.

For four years, politicians, professionals and environmentalists debated widely the issue of the location of the future crossing of the Tagus, without obvious alignments within boundaries of either the political parties, the municipalities, the professions or even the government. For the first time in Portugal a decision of the Ministry of Public Works, Transports and

[1] JM Fernandes - Público (94.04.03).
[2] JJ Melo - Público (94.04.03).

Communications[3] was publicly challenged by other Ministries (Ministry of Planning[4] and Ministry of Environment[5]). One environmental association filed a complaint to the Portuguese administrative courts.

In June 1994 major popular protest occurred on the only existing crossing over the Tagus estuary — the 25th of April Bridge — when the Ministry of Public Works, Transports and Communications increased by 50% the toll fares as a contribution for the payment of the new bridge to be constructed, as he declared. Angry daily commuters considered it unfair and some of the users (in particular, truck drivers crossing the bridge several times a day) saw it as unbearable. After one week of unfulfilled efforts to call the attention of the government by intensive "honking" while passing through the toll booths, they took a more radical stand blocking the bridge for one day. These incidents were a dramatic reminder that the location of the new bridge, once considered a closed issue — "it is dead"[6] — was still very alive. The more recent debate (March 22, 1995) over the future bridge location, with the presence of the President of the country, reinforced this idea.

By legislation of January 1991, the government created the Office for the Tagus River Crossing in Lisbon (GATTEL)[7] to "develop, coordinate and control the activities needed for the promotion of construction and exploration of a second road crossing of the Tagus in the Lisbon region." This office operated under the Ministry of Public Works, Transports and Communications, with representatives of this Ministry and three others (Ministry of Planning, Ministry of Environment and Ministry of Finances[8]).

The Steering Committee of the GATTEL, set up with representatives of the four Ministries, appointed a team of transportation management, planning and environment professionals — the GATTEL Planning Team — to study location alternatives for the new estuary crossing, its technical specifications and impacts. Emerging in a period of intensive planning activity, when several plans were establishing the policy guidelines for development and transportation in the metropolitan area, this group of professionals working for the GATTEL carried out studies to support the decision on the location of the bridge. For eight months (January to September 1991) they studied the alternative locations for the second crossing of the estuary, and submitted three possible options to the Steering Committee of the GATTEL.

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[3] MOPTC - *Ministério das Obras Públicas, Transportes e Comunicações* - Ministry of Public Works, Transports and Communications.
[4] MPAT - *Ministério do Planeamento e Administração do Território* - Ministry of Planning.
[5] MARN - *Ministério do Ambiente e Recursos Naturais* - Ministry of Environment.
[6] Público, 93.02.03, *Ponte sobre o Tejo: uma polémica morta.*
[7] GATTEL - *Gabinete da Travessia do Tejo em Lisboa* - Office for the Tagus River Crossing in Lisbon, created by the Decree-Law 14-A/91.
[8] MF - *Ministério das Finanças* - Ministry of Finances.

The GATTEL Steering Committee prepared a report to the Minister of Public Works, Transports and Communications with a summary of the conclusions of the study and recommendations for the location of the new crossing. In the opinion of several planning and transportation professionals, the final recommendations of this report and the final decision of the Minister of Public Works, Transports and Communications were not in accordance with the technical suggestions of the studies carried out by the GATTEL Planning Team. As in many other cases, professionals complained that the final decision did not incorporate the technical information developed.

The decision process for the location of the second crossing over the Tagus estuary was set up to achieve consensus on the technical requirements. At the beginning, the GATTEL Planning Team thought this process would be a straightforward decision between two possible well-known alternatives — the *Almada* and the *Montijo* pathways. However, none of these possibilities responded adequately to the two main stated objectives — the national North-South connection and the relief of congestion on the existing bridge. The team considered that the bridge proposed in the National Road Plan for *Carregado,* North of the Tagus river estuary, addressed adequately the first objective, and gave higher priority to solving the congestion in the existing bridge across the estuary, perceived as a bottleneck for the metropolitan area development. While the work continued, the GATTEL Planning Team developed a third alternative never considered before — the *Barreiro* pathway (central corridor). This formerly unexpected solution developed during the studies transformed the once straightforward decision between two obvious one-choice alternatives, doable in a short span of time, in a long and controversial decision process. The controversy opposed the unexpected solution at *Barreiro* to the previously obvious location at *Montijo.* Several entities at all levels began supporting the new option, calling attention to the disadvantages found in the *Montijo* crossing.

The unexpected alternative disturbed the assumptions of many people in responsible roles, mostly politicians and professionals working in the Lisbon region, previously confronted with just the other two possibilities. Besides, this option was quite attractive for some of the actors involved because it emerged simultaneously as a cure for two depressed zones of the metropolitan area on both sides of the river — *Chelas* and *Barreiro.* According to the studies, this choice had more potential to capture traffic away from the existing bridge and to solve congestion. At the same time, it had the advantage of having smaller negative impacts on the periphery of Lisbon, preventing the appearance of a new front of development in the South and reducing the disturbance of the Natural Protected Area in the Eastern part of the estuary. The organizations and individuals concerned with the environment considered these two aspects very attractive.

Up to a certain extent, the GATTEL Planning Team, responsible to study and to identify the best crossing alternative, was highly successful. It achieved a considerable consensus within the technical community, including the GATTEL consultants and municipal officers, favoring the *Barreiro* option. It is not so clear what it achieved within a wider constituency or at the higher levels of decision in the central administration when the Minister of Public Works, decided in favor of the location in the Eastern corridor, a decision that was later on adopted by the Council of Ministers.

By this time, professionals (urban planners, transportation specialists, environmentalists) raised questions about the clarity of the initial governmental problem definition for the new crossing. Environmental groups strengthened their positions, and the issue increased in complexity. Several entities carried out debates over the data collected and analyzed by the technical consultants. These included the GATTEL Planning team, the professional associations, the environmental NGOs and the political parties. These debates produced information and brought up new concepts reshaping the way people were looking at the issue, sometimes making them abandon the previously position for the new one. For example, information made some people see the bridge as a potential tool to recover declining areas by increasing in accessibility, influenced actors and gained substantial supporters. Moreover, the new alternative led professionals to recognize the limitations of the initially considered crossing locations. Debates brought up several variations to the alternatives being considered and even new possibilities (e.g., the environmentalists proposed a bridge in the *Barreiro* corridor with only the train mode). Politicians, professionals and environmentalists, unhappy with the proposed solutions generated new options and debated them frequently in the media.

Part of the interest in this big infrastructure location had to do with its high potential to spatially reshape the metropolitan area. The decision would have major consequences for growth management of the area. Moreover, the land use and transportation plans and studies that were going on at the time had already created, for the politicians and professionals working in the region, a space of discussion and reflection on the future of the metropolitan area. This activity that took place before and during the present study, set up an interactive process within the technical community. The professionals involved had the opportunity to jointly debate issues that concerned the region and to share a more global understanding of the metropolitan area. While discussing the issues, they used information to defend their views and knowledge became integrated. The views of several politicians and technicians of the metropolitan municipalities changed during the process, as displayed afterwards in an increased capability for looking at the municipal issues in a more global way. As one interviewed municipal urban planner stated, the debate over issues concerning the whole metropolitan area, which had begun with the discussions for the Land Use Plan, made the participants to "have a metropolitan reading" of the development problems. This person meant, according to a more detailed explanation offered, that they began looking at the issues

not just under the perspective of their own municipality but as part of a vast region the metropolitan area. The concern of each municipality exclusively with its own territory, with little or no awareness of the continuity of space, gave place to a new understanding of the metropolitan area as a whole.

Several groups and individuals disagreed with the government decision on the location of the new crossing, in particular environmentalists. They looked for supporting data, most of it coming from the studies developed either by the GATTEL or by other entities. Municipalities in the South split between the East corridor (*Montijo* pathway) and the central corridor (*Barreiro* pathway), depending on their geographical location. However, the municipalities of the Metropolitan Area of Lisbon had a common stand defending the East corridor A alternative (North connection at *Sacavém*) when the Minister of Public Works, Transports and Communications adopted the East corridor B alternative (North connection at *Olivais*).

Some initially independent groups or individuals, realizing that they had common interests and points of view on the issue and being aware of the scarcity of available resources, joined efforts to come out with a common stand and actions. This happened with environmental associations and other participant groups, and led to the legalization of new citizen associations (e.g., the *Montijo* and *Alcochete* Association for Defense of the Quality of Life[9] and the 25th of April Bridge Users Association[10]).

There is plenty of evidence that the technical community, and even wide sectors of the community at large, were aware of most of the issues raised by professionals and had access to substantial information related to them, following the whole process attentively, taking positions and arguing over it. The media gave large coverage to the subject and had a determinant contribution for the subject to go public.

It is also the first time that a team of professionals had the specific assignment of identifying the best crossing alternative of the Tagus estuary. Some interviewees stated that this was what made the difference, because it allowed a group of people to look at the data in the light of the problem. This partially explains the development of a new alternative (see Chapter V - Findings).

Though the government did not adopt the new alternative developed by the GATTEL Planning Team, at the end of May 1995, it issued legislation to reserve land for a future bridge in the central corridor. This amounts to a considerable change of the government views on the estuary crossings. After all, the new alternative developed by the GATTEL may have influenced the government.

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[9] AMA - *Associação de Montijo e Alcochete para a Defesa da Qualidade de Vida - Montijo* and *Alcochete* Association for Defense of the Quality of Life.
[10] AUP - *Associação de Utentes da Ponte 25 de Abril* - 25th of April Bridge Users Association.

PART 1

GENERAL DESCRIPTION OF THE CASE

THE SETTING

The Metropolitan Area of Lisbon

The Metropolitan Area of Lisbon (AML)[11] consists officially of eighteen administrative units (municipalities)[12], spreading over 2,600 Km2 almost equally distributed on the two sides of the Tagus estuary. Its core, Lisbon, is the capital and the headquarters of the government of Portugal, a country with about[13] 89,000 Km2 and 10 million inhabitants. Though the Metropolitan Area of Lisbon represents in area a small part of the mainland territory (about 3%), it houses a considerable share of the overall socio-economic structure. In 1991, it had 1/4 of the national residents, accounted for about 1/3 of the overall national employment and 2/5 of the national employment in the tertiary sector, and housed more than half of the headquarters of the main national corporations.

The population densities in the AML are nine times higher than the national average and in almost 70% of the total national population living in urban places of ten thousand or more inhabitants. Recent estimates of the National Institute of Statistics show that the *distritos*[14] of

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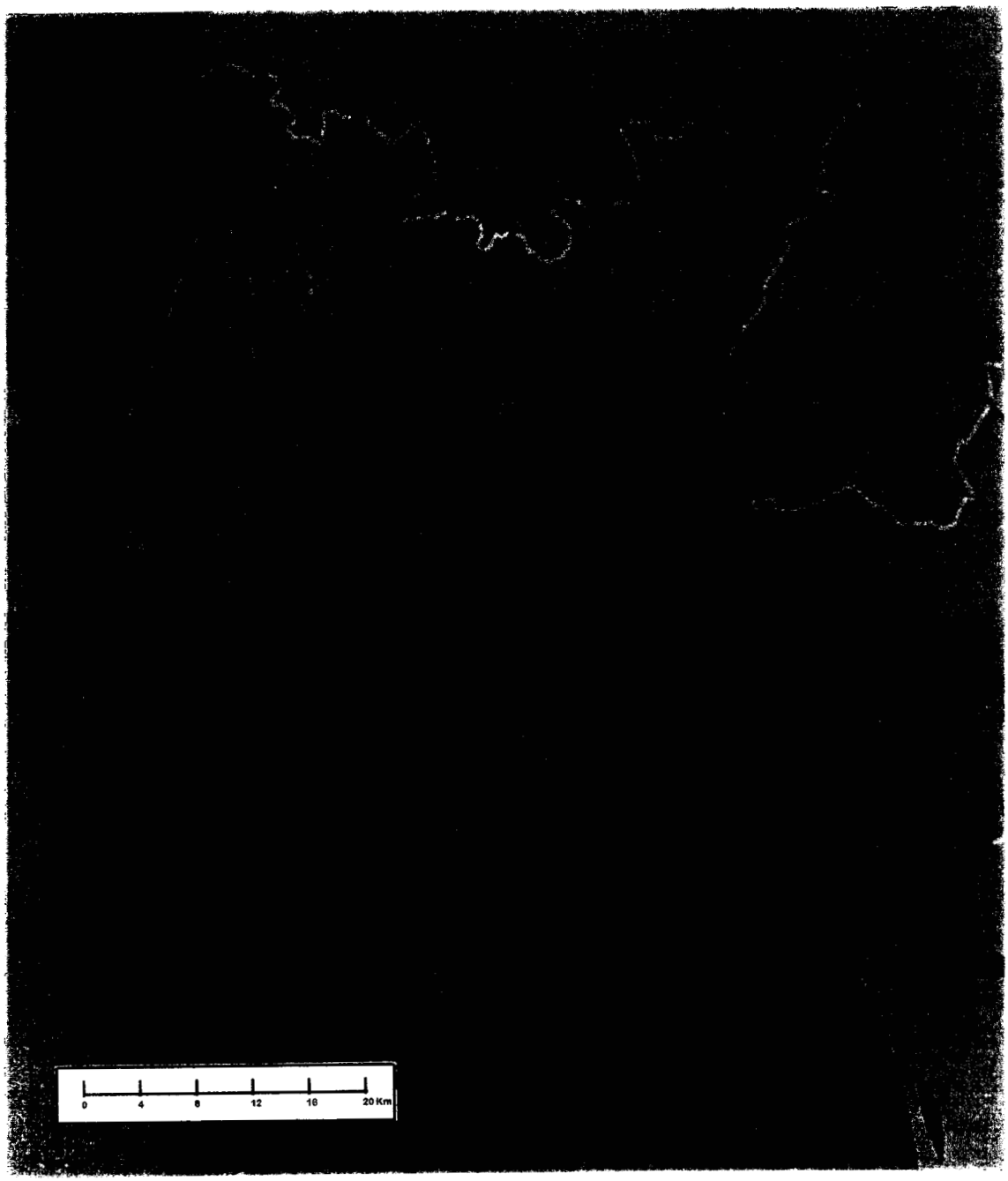
[11] AML - *Área Metropolitana de Lisboa* - Metropolitan Area of Lisbon.

[12] According to the legislation (law n°44/91, August 2,1991) that creates the two metropolitan areas in the country — Lisbon and Oporto — the municipalities of the Lisbon Metropolitan Area in the Northern Tagus bank are: *Amadora, Azambuja, Cascais, Lisboa, Loures, Mafra, Oeiras, Sintra, Vila Franca de Xira,* and in the Southern Tagus bank: *Alcochete, Almada, Barreiro, Moita, Montijo, Palmela, Seixal, Sesimbra, Setúbal.*

[13] 1 000 acres = 4 Km2 .

[14] *Distrito* is an administrative subdivision consisting of several municipalities and holding mostly political functions. Portugal has 18 *distritos.*



Source: MOP - GPST, 1966.

Figure IV.3 - Bridge over the Tagus opened in 1966.

During the nineties the tertiarization of Lisbon economic activities continued, as well as the rehabilitation of existing housing. At the same time the number residents declined sharply (Lisbon lost about 150,000 inhabitants). Recent local policies aim at preserving and, in certain areas, enhancing residential uses as a way to avoid the declining of the centers.

Evolution of the metropolitan area

The last forty years were decisive to the metropolitanization process in Lisbon. The city grew in area and population, spreading over the neighboring municipalities and relying on the main radial road and train transportation lines (Lisbon-*Cascais,* Lisbon-*Sintra,* Lisbon-*Alverca-Vila Franca de Xira*) and the radial road line Lisbon-*Loures-Torres Vedras* (Figure IV.4). The construction of the bridge connecting both sides of the Tagus river in 1966 opened the door to the occupation of the Southern bank. Lisbon kept always its hegemony, working as a pole of attraction, although since the 1950's there appeared indications of a demographic stabilization of the City with diminishing rates of growth, and even a net decrease in resident population in the last decade (1981-1991).

The residential expansion of the forties shifted to industrial growth in the sixties. Small industries spread all over the accessible locations within the existing transportation network, forcing the labor force to look for residencies either in the neighboring municipalities or in accessible places along the existing network. Bigger industrial plants, in turn, worked as poles generating the urbanization of its surroundings.

The radiocentric spatial distribution of the metropolitan area was reinforced and new development fronts emerged and expanded. The periphery grew demographically. Despite efforts creating secondary sector jobs in the periphery, the employment dependency on the capital increased. This unbalanced economic and functional distribution is responsible for the important commuting traffic fluxes between periphery and center.

Housing and industry gradually invaded fertile agricultural lands of the metropolitan area, in a disorganized way due to the lack of planning policies. This situation became even worse with the emergence of illegal housing resulting from pressing demands of lower income groups unable to find affordable homes and an associated crisis of regulatory authority.

The sixties and the seventies brought up a new phase in the spatial structuring of the metropolitan space: densification, expansion and renovation of the existing urban centers, the opening of new development fronts and the fulfillment of empty spaces between main transportation axes. The unbalance between demand and supply generated new construction, a large part of it illegal, in particular in the municipalities surrounding Lisbon. These developments were substantially dependent on public bus transportation and the road network.

In the seventies, the main growth occurred in the neighboring municipalities closer to Lisbon — *Oeiras, Loures, Sintra, Cascais, Vila Franca de Xira.* The balance of supply-demand in 1981 was only larger than one for Lisbon and *Setúbal*, with the other municipalities in the metropolitan area exhibiting smaller values (Vasconcelos *et al.*, 1991; Vasconcelos *et al.*, 1992).

More than half of the metropolitan jobs are located in Lisbon, and about 80% of them are in the Northern bank. This dependence favored the emergence of huge urbanized areas around Lisbon with dormitory characteristics. Commuting traffic within the Metropolitan Area of Lisbon grew with further improvements of the road network. The demand for housing and infrastructures generated the emergence of large residential areas in the peripheral municipalities relying on high densities and large buildings, and a further increase of illegal construction.

During the eighties, the influence of Lisbon over the surrounding region persisted and the interdependencies grew, although a demographic stabilization of the town became apparent. Within the whole area, the vacant lands between the main transportation network were filled, generating the spread of growth in successive circles from Lisbon outwards (PROTAML[17]). However, Lisbon presented a decline in population in the period 1981-1991, suggesting a spatial spread of the nucleus of attraction that now seems to include the municipalities of *Oeiras, Amadora* and possibly part of *Loures* (Vasconcelos *et al.*, 1992).

Although in socio-economic terms the Lisbon share has been decreasing within the metropolitan area, the whole area maintains its relative position in comparison with the country as a whole. This reinforces the idea that the pole of attraction of the Metropolitan Area of Lisbon is growing to a wider circle enclosing the neighboring municipalities around the town of Lisbon (Vasconcelos *et al.*, 1992).

As the access from the South to Lisbon has to deal with the barrier of the river, the municipalities in the North feel more strongly the attraction of the capital. The existing bridge, which is in operation since 1966, has only partially overcome this and is presently a serious traffic bottleneck. The commuting traffic to Lisbon originating in the municipalities North of the Tagus is five times stronger than from those in the South. Moreover, the alternative pole of *Setúbal* has not been strong enough to compete with Lisbon for attraction, neither were the other Southern municipalities accounting for a substantial urban-industrial growth — *Almada, Seixal, Barreiro* and *Montijo* (Almeida *et al.*, 1987) (Vasconcelos *et al.*, 1992).

The attraction of Lisbon over its surroundings, the growth of housing that necessarily had to look for regions further and further away, the concentration of employment in Lisbon, the lack of coordination policies of housing and employment locations, the radial transportation

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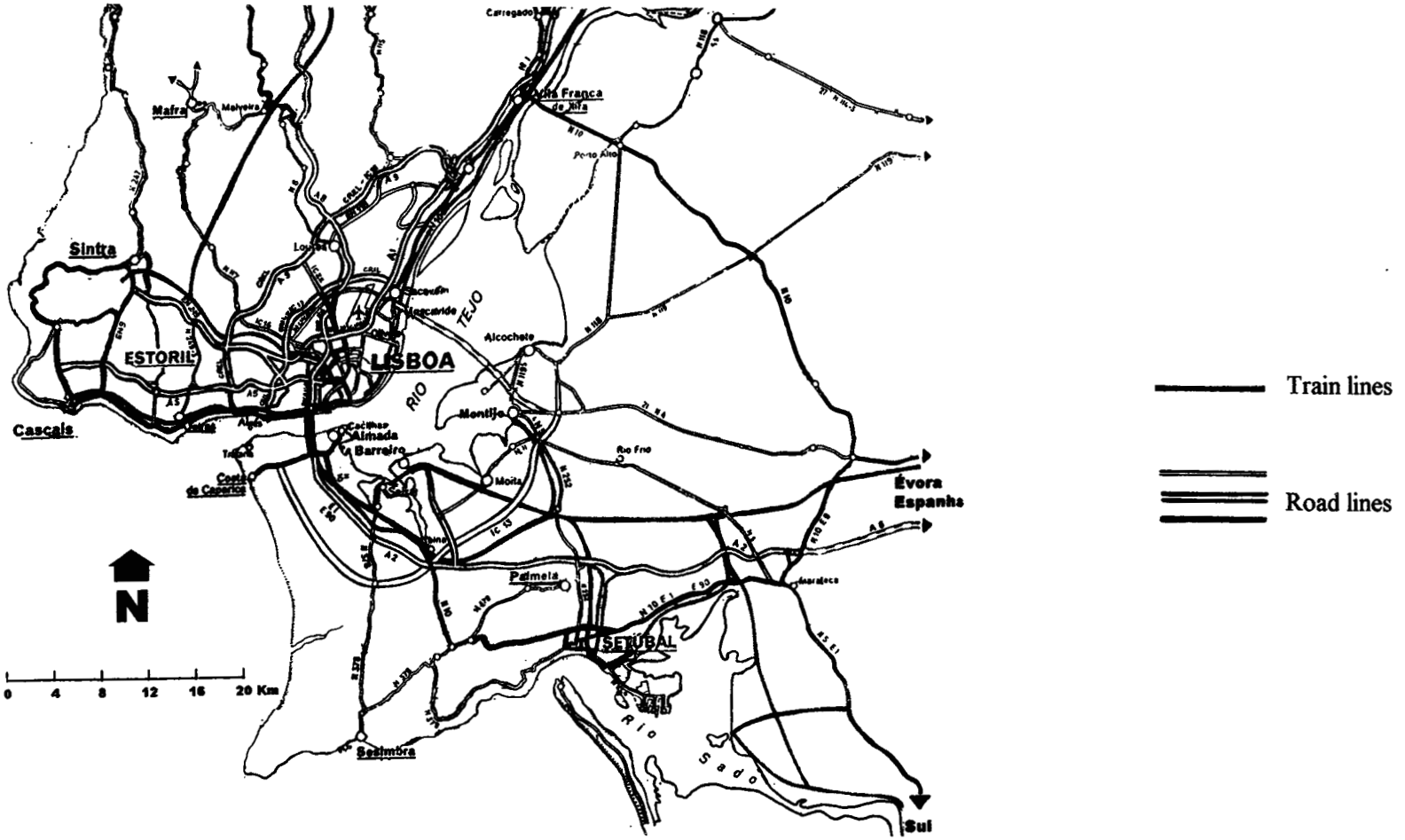
17 PROTAML - *Plano Regional de Ordenamento do Território da Area Metropolitana de Lisboa* - Regional Land Use Plan for the Metropolitan Area of Lisbon.



Source: Adapted from GATTEL (1991) and Michelin® (1995).

Figure IV.4 - Main radial road and train lines in the AML.

network, the reaching of the transportation network capacity threshold (Almeida *et al.*, 1987), the increasing number of cars in circulation, among other factors, generated an increase of daily commuting traffic that led to serious congestion, particularly in the rush hours.

Socio-economic profile

The banks of the Tagus estuary with a coastline of beaches are mostly in use for port facilities, naval industries and recreation. They offer excellent conditions for these activities. Recreation (sailing, wind surfing, rowing, sport fishing, swimming) and economic activities (traditional fishing, clam catching) use intensely the estuary.

Lisbon, the capital, shows a strong increase in the tertiary but still presents clusters of important industrial plants. It operates as the main site of international connections in the country and is by itself an important tourist attraction.

The Northern part of the metropolis is highly urbanized and densely developed. The urban development borders the periphery of Lisbon and a great deal of spreads over the transportation axes *(Cascais, Sintra, Loures* and *Vila Franca de Xira),* leaving empty the spaces between them. *Cascais* and *Sintra* are important tourist resorts.

The part of the Metropolitan Area of Lisbon South of the Tagus consists on the Peninsula of *Setúbal.* The Southern bank urban development follows the waterfront along the Tagus from *Almada* to *Moita,* with concentrations depending on the location of boat connections, the road axes connecting to the existing bridge, and the train line to the South of the country leaving from *Barreiro.* It is organized around a few ancient satellite towns and industrial zones, such as *Almada, Barreiro* and *Seixal.* The town of *Setúbal* in the further South of the metropolitan area is an important industrial site and urban center. The Peninsula of *Setúbal* is currently undergoing a strong economic development with the attraction of some major European investments, with *Palmela* being the site of a European consortium car factory that accounts for the highest foreign investment in the country in recent years. A substantial part of the South of the metropolitan area has rural or quasi-rural features, with empty spaces scattered throughout the interior of the Peninsula of *Setúbal.* Tourists seek the ocean coast line due to the beauty of its beaches and landscape. *Sesimbra,* besides being a much sought tourist attraction is a traditional fishing resort.

The socio-economic profiles of the municipalities of the metropolitan area are diverse. *Setúbal* is well known for being an important industrial pole, competing with *Lisbon* in attraction. Five municipalities are mostly industrial *(Seixal, Vila Franca de Xira, Sintra, Barreiro* and *Moita)* and some add to industry a share in the tertiary sector *(Amadora* and *Almada).* The most rural municipalities *(Montijo, Alcochete* and *Palmela)* live from a combination of the primary and industrial sectors. *Cascais* and *Oeiras* in the North bank show

a substantial tertiarization and have some important industries. *Lisbon* is the most important in the share of tertiary employment. *Mafra* and *Sesimbra* and *Azambuja* are important in their primary sector and derived industries. The littoral municipalities within the AML have also important tourist activity, bringing the typical seasonal changes difficult to manage. From these *Sesimbra* plays a central role having its population duplicated each summer.

Table IV.1 - AML municipalities socio-economic profiles

Municipalities	Profile
Seixal, Vila Franca de Xira, Sintra, Barreiro, Moita, Loures, Setúbal	urban, industry
Amadora, Almada	urban, tertiary, industry
Montijo, Alcochete, Palmela, Mafra, Sesimbra, Azambuja	rural, primary sector and industry
Cascais, Oeiras	urban, mostly tertiary, industry
Lisbon	urban, mostly tertiary

Ecological value

The Metropolitan Area of Lisbon, despite housing three million inhabitants, still offers highly diverse natural amenities. It includes several areas of recognized importance for nature conservation scattered over its territory (see Figure IV.6). Spreading over the two banks of the biggest West European estuary[18], it contains in the East one of the most important European wetlands that shelters several fish and birds threatened with extinction. The ecological value of this wetland lays in providing nursing and habitat to several natural species, and in being a seasonal resting place for migratory birds. It is one of the European ecological "sanctuaries", being part of the East Atlantic Flyway, a network of wetlands from Northern Europe to Africa that assure the survival of many birds all over the European and African continents. During the winter, the estuary provides shelter to more than 90,000 birds[19].

During recent decades the Tagus suffered strong urban, industrial and agricultural pollution, which resulted in the disappearance of part of its natural patrimony (e.g., disappearance of oysters during the end of the sixties due to TBT contamination, and of certain types of fishes and dauphins). The declining of the Environmental Quality of the Tagus also forced migrant birds to the South.

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[18] Approximately 40 000 ha (320 km2), with a length of 80 km (from *S. Julião da Barra* to *Muge,* limit of the tide influence); the salt intrusion goes as further as *Vila Franca de Xira,* 50 km from the sea.

[19] *Dossier Erros Históricos de Ambiente — A Nova Ponte Sobre o Tejo em Lisboa* , GEOTA, IDD, LPN, Quercus, 1994.

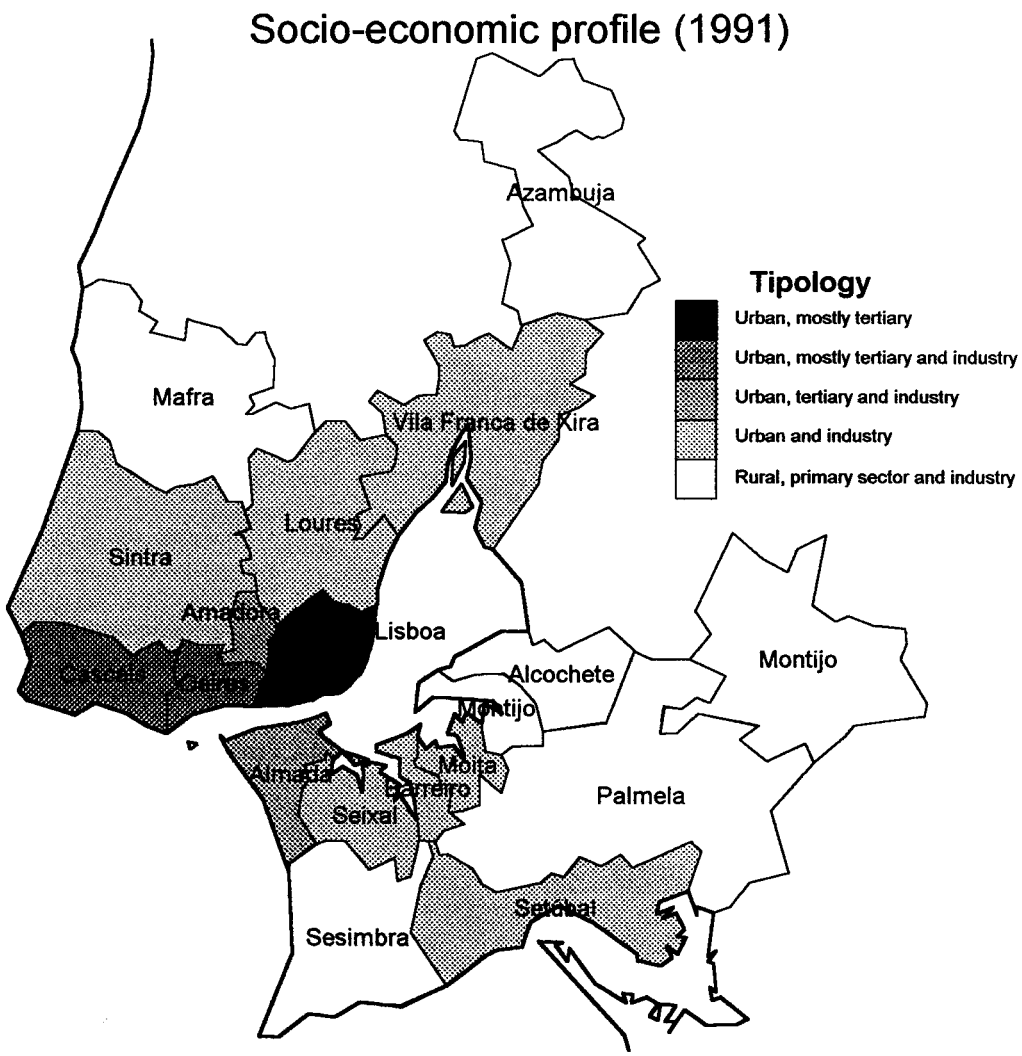

Figure IV.5 - AML municipalities socio-economic profile

Awareness of the decreasing environmental quality, international pressures and efforts of a few citizens concerned with the environment led to the creation of a Protected Area in the estuary. The Natural Reserve of the Tagus Estuary[20], with about 15,000 ha, was created in 1976 and is managed by the National Conservation Institute[21]. The environmental management of this Protected Area contributed to the partial recovery of the estuary living species (e.g., in ten years the aquatic birds in the winter increased from 80,000 to 120,000).

Two international environmental conventions — Ramsar (1971) and Bern (1979) — have particular relevancy to the Tagus estuary. The Ramsar Convention aims at avoiding the destruction of the wetlands, while the Bern Convention refers to wild fauna and flora of European natural environments, including species and their habitats. With the signing of the Ramsar Convention in 1980, the Portuguese government registered the Tagus estuary in the list of the "International Important Wetlands", and assumed formal responsibility for the "rational exploration" of the Aquatic Birds Habitat. Portugal signed the Bern Convention in 1981, assuming a further compromise to protect the habitat of a long list of endangered species.

In 1988, the Portuguese government sent to the European Commission a list of zones for classification as Special Protection Areas for birds, complying to the 1979 European directive[22] 79/409 of wild bird protection. Aware of the natural importance of the Tagus estuary for wild birds, the Portuguese government proposed a 40,000 ha Special Protection Area in this estuary, including the Natural Reserve of the Tagus Estuary but larger than this natural reserve.

Natural constraints to traffic mobility

Mobility restrictions have been, throughout history, a serious problem for the Metropolitan Area of Lisbon development that deserved considerable attention and debate.

The wide river estuary is a natural barrier to land transportation, constraining the North-South mobility. This is a long recognized major constraint to the economic and social development of the region (e.g., by Birot in 1950 as referred in Fernandes, 1993).

There are also more elusive severe constraints to traffic along both banks of the Tagus due to different physiographic features. In the North bank, hills separated by narrow valleys in the

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[20] RNET - *Reserva Natural do Estuário do Tejo* - Natural Reserve of the Tagus Estuary, created by the Decree Law 565/76, July 19, falling in the territory of several municipalities *(Benavente, Vila Franca de Xira* and *Alcochete).*

[21] ICN - *Instituto de Conservação da Natureza* - National Conservation Institute.

[22] Transfered to the Portuguese Legislation by the Decree-Law 75/91, February 14.

West and East of the Lisbon City *(Alcântara* and *Chelas)* develop perpendicular to the coastline, leaving a reduced number of easy natural alternatives for crossings. This reflects strongly on the congestion of traffic entering Lisbon along both directions of the Northern Tagus bank. In the urban developed part of the Southern bank from *Almada* to *Alcochete,* despite the flatness of the land, numerous peninsulas defined along the river bank by small bays and ramifications of the estuary are obstacles to transversal transportation links along the Tagus bank, restraining mobility among the Southern municipalities and contributing to accentuate the dependency of these municipalities on the capital through boat connections.

A CENTURY OF HISTORY OF DEBATES OVER THE BRIDGE CROSSINGS

The discussions of Tagus crossings in Lisbon have a long history. The bulk of the needed infrastructure, the potential for reshaping a whole metropolitan area and the impact on the transportation network are already enough reasons for generating debate.

The issue of crossing the Tagus in Lisbon emerged several times since the end of last century, bringing with it studies and proposals developed along two main pathways connecting both banks: *Montijo* and *Almada.* The projects developed, up to the present time and since a first proposal in 1876, restrained just to these two shortest (see Figure IV.7) corridors connecting Lisbon to the other bank.

Miguel Pais

By 1876, Miguel Pais, then Technical Director of the South and Southwest Train Line, a visionary engineer and a pioneer in the proposals for overcoming the Tagus, concerned with the need for a crossing, developed the first study proposing a road-train connection between Lisbon (at *Xabregas*) and *Montijo.* His idea was to construct a 4.5 km double-platform bridge — road on top and train below — connecting in the North the *Beato* (more properly called the *Sítio do Grilo*) to *Montijo* in the South, next to the Air Base that exists now.

Miguel Pais was at the time responsible for the project of the train station in *Barreiro* that is still nowadays the starting point of the train line to the South and Southeast of the country. His main concern was to provide a convenient train and road connection between Lisbon and the South train lines. The alternative, then, was to rely on time consuming and inconvenient boat river crossings Lisbon-*Barreiro* as it happened up to now.

Around the end of the last century, Lisbon was a tiny capital with about 200,000 inhabitants[23], and *Montijo* was a remote rural village well away from the center of

[23] *II Censo de População,* INE, 1878.

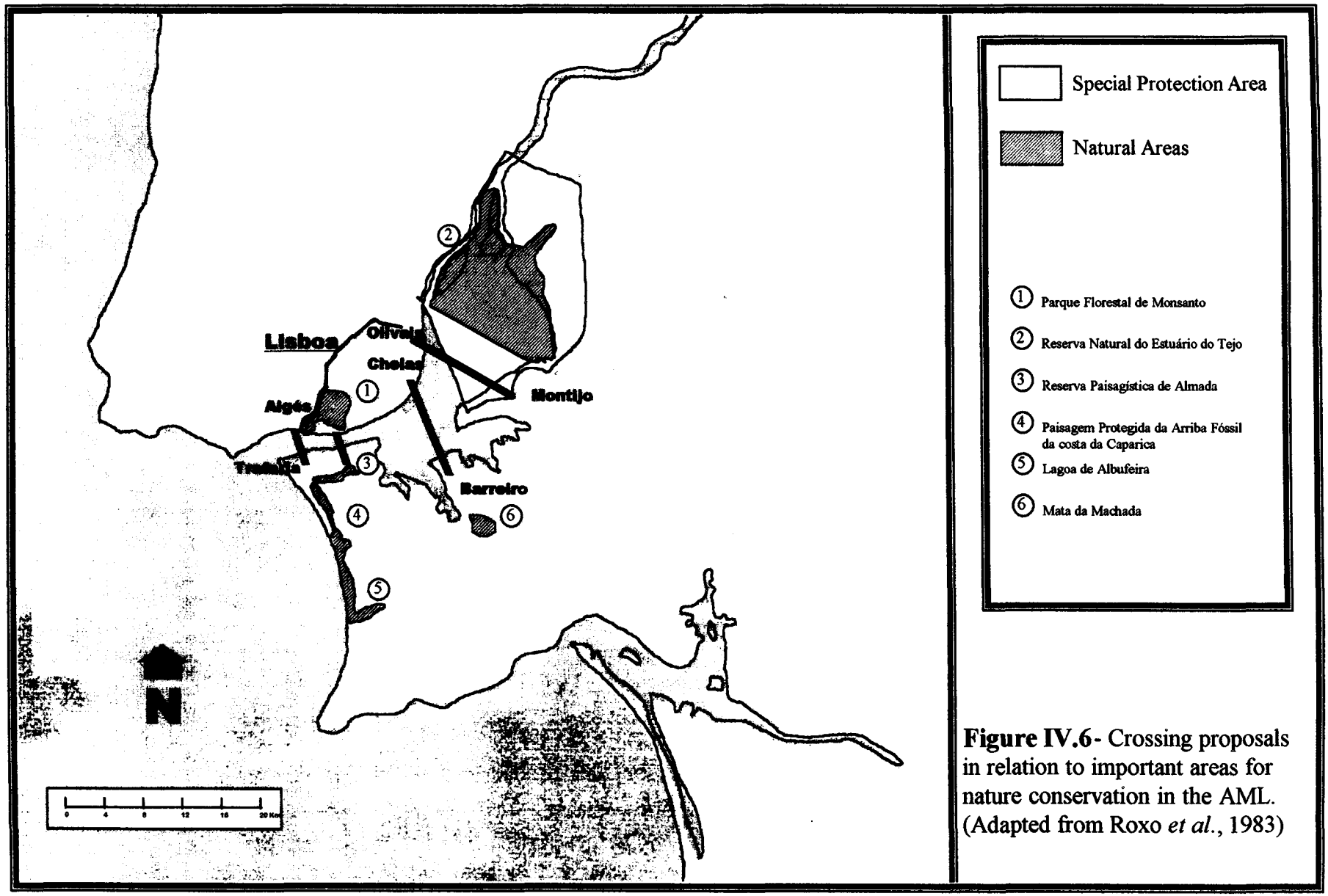

Figure IV.6- Crossing proposals in relation to important areas for nature conservation in the AML. (Adapted from Roxo *et al.*, 1983)

development. Since the monarchy, *Montijo* was a gate from Lisbon to the South (an "accessible place, a passage to the South — *Alentejo*" that loses "this status with the growing importance gained by *Barreiro* due to the train connection", as stated by one of the interviewees). Although the Miguel Pais project ended up receiving the support of renowned engineers of the time, of the Lisbon Municipality and of the public opinion, it was not further pursued.

In 1890 a German firm presented a proposal for a bridge following the main lines of Miguel Pais idea. After that, a number of proposals appeared for a bridge in the *Almada* pathway (Lye - 1988, Bartissol and Seyrig - 1889, André de Proença Vieira - 1890, a Portuguese firm - 1913, Alfonso Peña Boeuf - 1921).

Duarte Pacheco

In 1933, Duarte Pacheco, then Minister of Public Works of Salazar, reassumed the Miguel Pais project for a road-train bridge in the *Montijo* pathway. He nominated a commission for programming the construction and preparing an invitation to tender. This followed the recommendations of a commission nominated by the government in 1930 and whose conclusions had led to a detailed geological study of the river bed commissioned to a German firm. After approval by the Council of Ministers, the call for bidders was opened in 1934 and arose much interest in international technical and financial circles. Four international consortiums submitted proposals, but the government canceled the tendering in 1935 claiming that the proposals did not conform to the requirements in the invitation to tender. In 1938, one of the consortiums submitted a revised bid, lowering considerably the construction costs. This bid did not receive any governmental decision. Of all the considered proposals, this project for a bridge *Beato-Montijo* was the only one based on actual geological studies of the river bed.

In 1941, several Southern municipalities *(Barreiro, Alcochete, Moita* and *Seixal)* requested to the Minister Duarte Pacheco the improvement of communications between them and with *Almada.* He nominated a commission to study an integrated solution of the road and train communications of the East of Lisbon with the South. The studies of this commission were interrupted in the sequel of the priority given by the government to the construction of the *Vila Franca de Xira* Bridge. This bridge was inaugurated in 1948 and is located 25 Km away from Lisbon upstream the Tagus, where the river becomes much narrower after the end of the estuary. It completed a series of connections between the two banks of the Tagus upstream the estuary, solving, at that time, the local and regional communications and the North-South long distance connection across the Tagus, without the need of resorting to the river crossing in Lisbon.

The fulfillment of the *Almada* pathway — Salazar/25th of April Bridge

By the end of the 50's the *Almada* corridor is chosen, leading to the effective construction of the only bridge over the estuary that exists nowadays. This is a road crossing conceived to be later on extended to a train crossing in a lower level. However, this train crossing was not accomplished. The bridge started operating in 1966, establishing the only direct road alternative to the boat crossings of the estuary.

The emblematic character assumed by this infrastructure is clear in the name it received — Salazar Bridge — after the strong man of the forceful political regime that had ruled the country for forty years and was still the Prime Minister at the time of the bridge inauguration. After a military coup overthrew the old political regime in April 25, 1974, the bridge received its present name — 25th of April Bridge — reinforcing its emblematic character.

Objectives of the 25th of April Bridge

In 1953, the government created a Commission for the Study of the Road and Train Connections between Lisbon and the Southern Bank of the Tagus[24]. The legislation that created the Commission mentions that the previously proposed crossings are the "Sunrise connection — from Lisbon to *Montijo;* central connection — from Lisbon to *Almada;* Sunset connection — from Lisbon to West of *Almada",* and observes:

> "(The *Vila Franca de Xira* Bridge) brought relief to the river crossing in the capital and its surroundings. ... However, due to a steady traffic increase, the connections between Lisbon and *Almada* are daily becoming more time consuming and difficult, so it is not appropriate to consider that bridge as having definitively solved the general problem of the connections between the river banks. ... The *Vila Franca* Bridge may eventually have invalidated the justification of a connection to *Montijo,* but it did not weaken the economic interest of the other connections referred above."

The new bridge in the *Almada* corridor intended to facilitate national and regional communications without inducing urban development. The report of the Commission[25] referred above, clearly states:

> "It can be considered that (the new bridge) influence in the development of the urban units in the Northern bank will be negligible, as these have development conditions much more related to the center of the country and to the Lisbon sea port.
>
> The connection, properly integrated in the regional organization of Lisbon, must exclusively be a communication link, since a basic underlying principle is that it shall not be a device for generating the urban sprawl of the Capital in the Southern bank."

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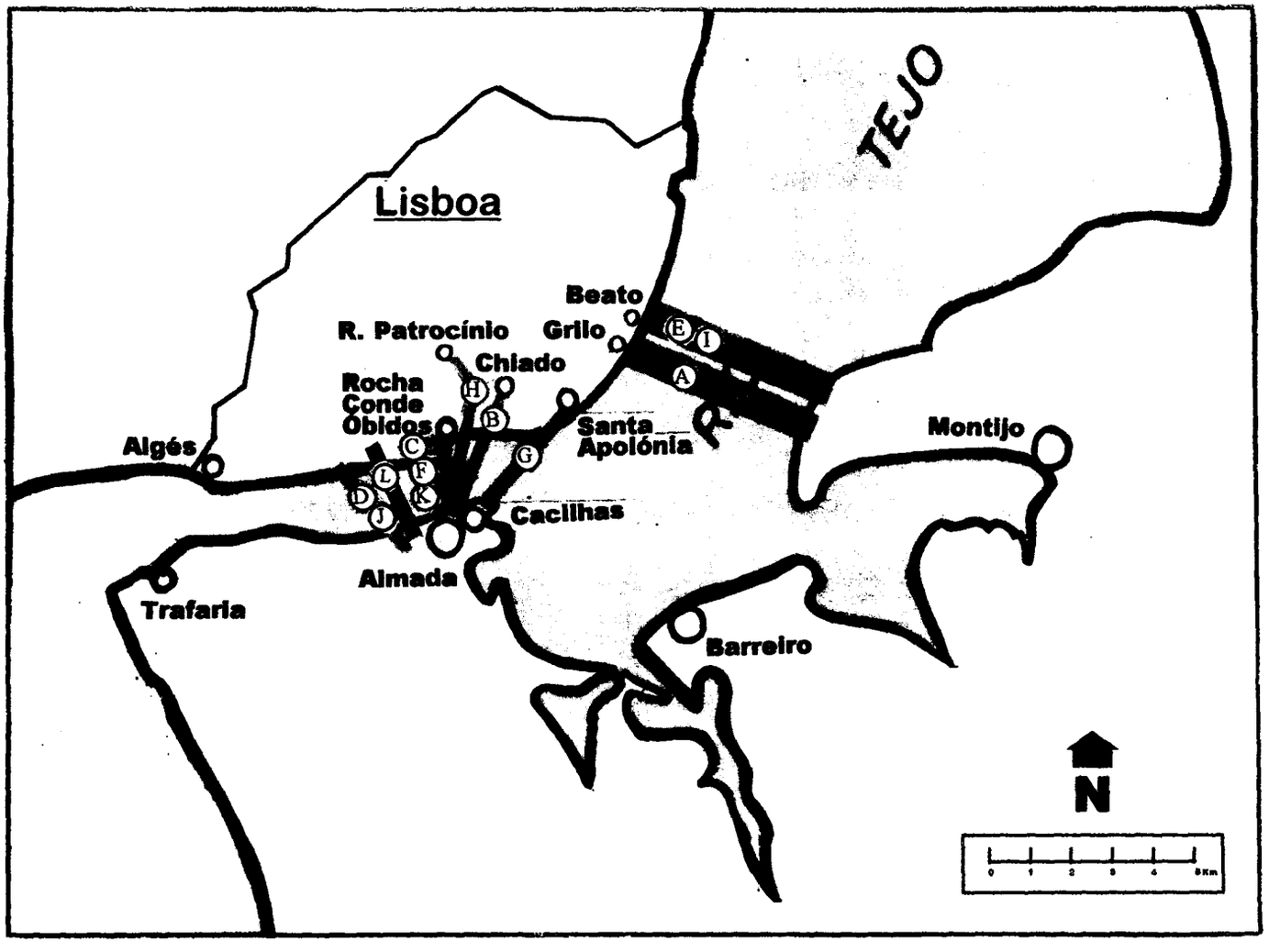
[24] *Portaria dos Ministérios das Obras Públicas e das Comunicações, de 16 de Junho de 1953,* Diário do Governo - II Série, 19/6/53.

[25] *Ligação de Lisboa à margem sul do Tejo,* in *Elementos para o Estudo do Plano de Fomento 1959-1964,* Ministério das Obras Públicas e das Comunicações, January 1957.



Ⓐ 1876 - Eng. Miguel Pais
Grilo - Air Base of Montijo

Ⓑ 1888 - Eng. Lye
Chiado - Almada

Ⓒ 1889 - Bartissol & Seyrig
Rocha de Conde de Óbidos - Almada

Ⓓ 1890 - Eng. André de Proença Vieira
- Almada

Ⓔ 1890 - Machinenbau/Aktiengesellschaft
Beato - Montijo

Ⓕ 1913 - Empresa portuguesa
Rocha de Conde de Óbidos - Almada

Ⓖ 1919 - H. Burnay & Cia.
Santa Apolónia - Cacilhas

Ⓗ 1926 - Cortez & Burhns
R. Patrocínio - Proximidades de Almada

Ⓘ 1929 - Eng. António Belo
Beato- Montijo (Train line)

Ⓙ 1938 - Eng. Zuzarte de Mendonça
Junqueira - Almada

Ⓚ 1951 - Eng. Peña Boeuf
Rocha de Conde de Óbidos - Almada

Ⓛ 1959 - United States Steel Export Company Consortium
Alcântara- Almada
(concluded in 1966)

Corridor I - A, E, I

Corridor II - B, C, D, F, G, H, J, K, L

Figure IV.7- Two corridors for crossing the river in Lisbon: several proposals along the years.

To avoid the unwanted urban sprawl, this study defends a policy of transformation of the small Peninsula of *Setúbal* urban units in poles of development "with a proper life and as independent as possible from Lisbon." For this purpose, the Commission report calls for a regionally planned attraction of industries and other economic activities to the Peninsula of *Setúbal* urban units and the creation of new centers of industrial and urban development in the area. To support the proposed development, the report defends the need of construction of road and railway rings along the Tagus Southern bank serving the population units that spread along the river bank from *Almada* to *Alcochete* and intersecting all the radials that leave these units to the South. Planning and transportation professionals consider that the lack of these connections contributed to prevented the development of autonomous urban centers in the Peninsula of *Setúbal.*

In the report, the Commission also expresses its support for a future "central connection", as follows:

> "Although, the study of the crossing solution *Beato-Montijo* is not studied presently, ... the Commission thinks that this crossing, which is so relevant for the train connection proposed in the railway plan, should not be abandoned."
>
> "The expected connection *Beato-Montijo* will naturally be the central link of the whole system previously referred (Lisbon regional communication system)."

Impacts of the 25th of April Bridge

The bridge was constructed, but the desired autonomous economic development of the Southern bank urban units and the associated transversal road and train interconnections, intended to increase their independence from Lisbon, were never accomplished. Exposed to strong development pressures by the increase of accessibility provided by the new bridge, the Peninsula of *Setúbal* went through drastic urban development during the years that followed the construction. Cheaper land for development in the rural Southern bank was available in the market as soon as the decision of the bridge construction became known, leading to a pool of land for development well beyond the needs up to the year 2000. The rural features of the area changed deeply and construction in the Southern municipalities was chaotic due to the lack of enforcement of regulations, as stated by two interviewees.

Greater accessibility between the two river banks, job dependency from the capital associated with a higher number of vehicles in circulation worsened congestion in the bridge. With the development of the South, mostly for residential purposes, and the continuous dependency of its residents on Northern bank jobs, traffic grew and exceeded the bridge capacity. The generated congestion compromised the quality of life of the everyday commuters. Long lines[26] of vehicles heading to Lisbon develop every morning, frequently taking up to 2 hours to reach the 3 km long bridge platform.

[26] frequently 12 km long.

Presently, the North-South road connection has proved insufficient. The Tagus bridges closer to Lisbon — the 25th of April bridge and the *Vila Franca de Xira* Bridge — have both reached their maximum capacities and the traffic faces delays caused by a serious congestion that generates long lines of vehicles. Congestion in the bridges became a problem of obvious concern, particularly for the Southern residents that have their jobs in the North bank.

After the construction of the 25th of April bridge, several studies analyzed the effects of the increased accessibility it provided. Among them, a work of A. Fonseca Ferreira, Isabel Pimentel Guerra and Victor Matias Ferreira identifies three zones of influence in demographic and spatial terms, depending on the proximity to Lisbon and the bridge influence[27]:

Zone I : "urban influence", where the proximity of Lisbon and the influence of the bridge are strong. It includes the municipalities of *Almada, Seixal and Barreiro,* generating a population growth of 157% between 1960 and 1981;

Zone II : "regional influence", where the proximity to the capital is weak and the bridge impact is strong. It includes *Setúbal, Palmela* and *Sesimbra,* municipalities with a demographic growth of 64% in 1960-81;

Zone III : "metropolitan influence", where there is almost no nfluence of the bridge and the influence of Lisbon can only be felt due to the boat connections. It includes *Moita, Montijo* and *Alcochete,* with a population growth of 48% in 1960-81.

This study concludes that the construction of the bridge also had as consequences: the expansion of the metropolitanization process relieving the North bank from demographic, urban and industrial pressures and extending to the South the industrial and residential areas strongly dependent on the capital; the specialization of the Peninsula of *Setúbal* in heavy industry, leisure areas and low density, single family residential areas; the dispersed and disorganized occupation and the lack of reinforcement of the Peninsula of *Setúbal* socio-economic independence, as consequences of privileging individual car transportation over mass transportation.

INTENSIVE RECENT PLANNING ACTIVITY IN THE AML

At the end of the 80's and the beginning of the 90's several land use and transportation plans and studies appeared setting policies and priorities at the regional, sub-regional and local levels. For "the first time there was an intensive effort to develop regional and local plans of land use and to stimulate the coordination of all agents involved in the organization and management of the territory"[28]. The main planning activity of this period is associated with the

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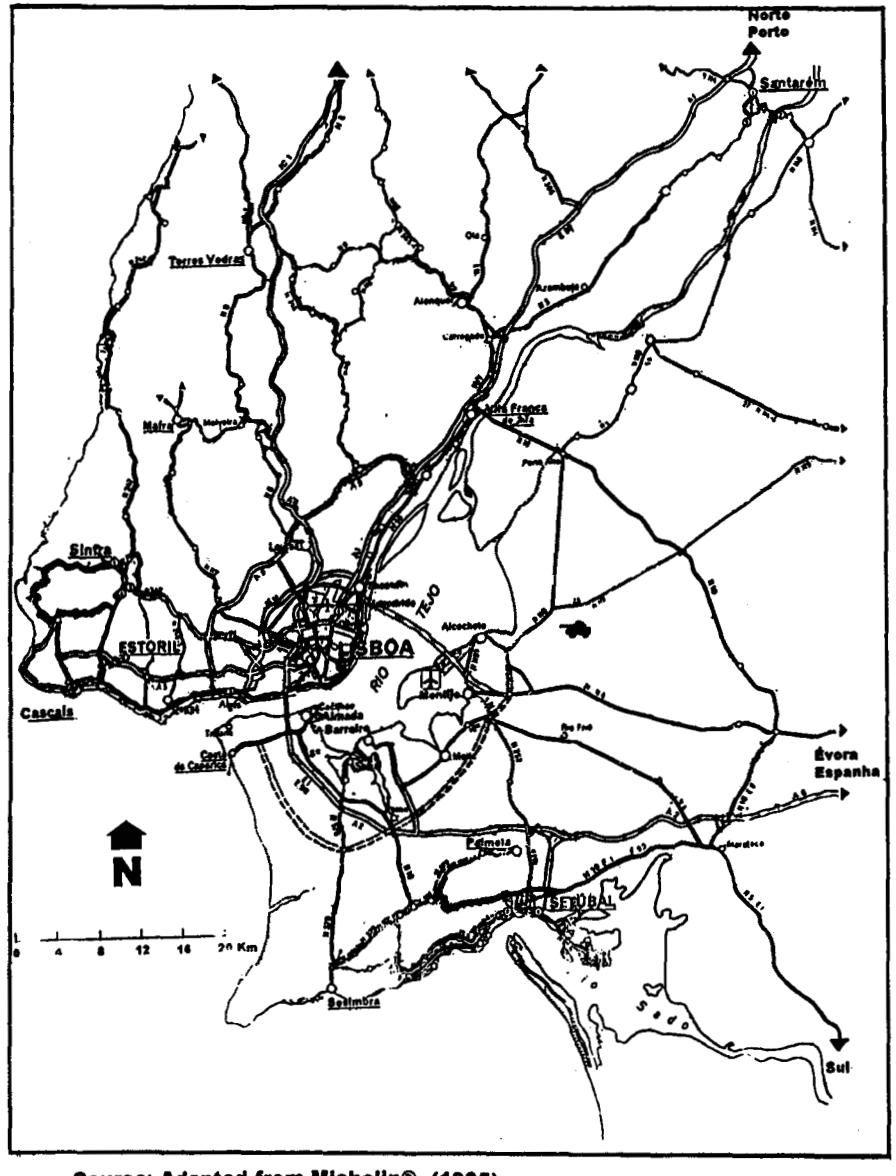
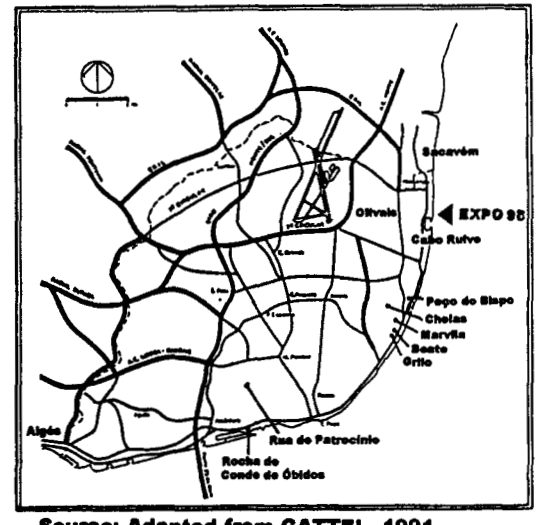
[27] *Metodologia de Avaliação dos Corredores,* Document 2, GATTEL, May 1991, pp. 9-11.

[28] J.P. Fernandes, Nova travessia do Tejo em Lisboa - Equacionamento das Suas Implicações no Ambiente e no Território. *Sociedade e Território,* June 1993 (pp.76-93).



Source: Adapted from Michelin® (1995)



Source: Adapted from GATTEL, 1991

Legend

Air Base of Montijo

Military Fire Training Camp of Alcochete

Figure IV.8 - Tagus bridges and transportation network in the AML.

development of the *Distrito* of *Setúbal* Development Plan (PIDDS)[29], the Regional Land Use Plan for the Metropolitan Area of Lisbon (PROTAML)[30] and the Municipal Master Plans (PDMs)[31].

PDR[32] / PIDR[33]

Developed in the mid eighties, these plans were mostly directed to inform the decisor on investment allocation and to propose overall policies for the region. The PDR is responsible for the definition of the regional policy and the identification of devices for its implementation. The PIDR can be considered as its spatial expression, being responsible for allocating the investments of the central government. The importance of these two plans lays in the setting of investment priorities within the region.

The Integrated Operation of Development (OID)[34] for the Peninsula of *Setúbal* was launched as a device to recover an area going through socio-economic problems. The idea of this operation, supported by EU/EEC funds was to address the serious development problems of this region. While contributing to the fullfillment of policies of regional development they were also correcting economic unbalances in the National territory, as required by the national regional policy.

Distrito of *Setúbal* Development Plan (PIDDS)

The *Distrito* of *Setúbal* Development Plan was developed between 1987-1990 under the direction of the Association of Municipalities of the *Distrito* of *Setúbal* . It aimed at the definition of criteria for the attribution of funds to these municipalities, taking into account the funds coming from the EU/EEC under the Integrated Operation of Development (OID). It was developed before the Municipal Master Plans (PDMs) and the Regional Land Use Plan for the Metropolitan Area of Lisbon (PROTAML), although the Municipal Master Plans for *Barreiro* and *Moita* were being developed since 1986. During the preparation of the PIDDS, politicians and technicians of the various municipalities debated the future for the Peninsula of *Setúbal* and developed a set of policies and priorities to be pursued. In the opinion of some professionals working in the Southern municipalities, this plan represented the starting point of a reflection

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[29] PIDDS - *Plano de Desenvolvimento do Distrito de Setúbal* - *Distrito* of *Setúbal* Development Plan.
[30] PROTAML - *Plano Regional de Ordenamento do Território da Area Metropolitana de Lisboa* - Regional Land Use Plan for the Metropolitan Area of Lisbon.
[31] PDM - *Plano Director Municipal* - Municipal Master Plan.
[32] PDR - *Plano de Desenvolvimento Regional* - Regional Development Plan, Resolution of Council of Ministers 21/84, January 16.
[33] PIDR - *Projectos Integrados de Desenvolvimento Regional* - Integrated Projects of Regional Development, Decree Law 86/84, March 19.
[34] OID - *Operação Integrada de Desenvolvimento* - Integrated Operation of Development.

on development options and contents that was later further extended and widened to the other municipalities of the Metropolitan Area of Lisbon, supplying a framework for the development of their Municipal Master Plans.

Regarding crossings over the Tagus estuary, this plan considers a new bridge in *Montijo*. It defended a model of poles of development to control growth, although some professionals involved in the planning effort recognize the need of a future connection in *Barreiro*.

Regional Land Use Plan for the Metropolitan Area of Lisbon (PROTAML)

The Regional Land Use Plan for the Metropolitan Area of Lisbon was started in May 1989, under the responsibility of the Ministry of Planning[35] and coordinated by the Coordination Commission of the Lisbon and Tagus Valley Region[36]. Its goal was to establish land use guidelines for the region.

It suggests a future Tagus estuary crossing at *Barreiro* as the most adequate for the proposed model of development of the Metropolitan Area of Lisbon. It was initially submitted in December 1992, but the government requested a revision by mid 1993. This revision was concluded in 1995 but is not approved by the government yet.

The Regional Land Use Plan for the Metropolitan Area of Lisbon was particularly relevant in generating a participation process, raising a lot of interest among specialists operating in the region, partially because it was the first time the metropolitan area was going to be planned as a whole.

A wide technical participation process emerged even before the beginning of the plan development, when news of a forthcoming regional land use plan for the metropolis emerged. In fact, fearing that municipal authorities would not be heard during the plan development, the Mayors of Lisbon and *Vila Franca de Xira* mobilized other local politicians and technicians to get together and intensively debate the wanted future for the metropolitan area as a whole. In the words of a municipal technician: "there were almost daily meetings between groups for discussing 'everything'; it was a very interesting period." The same person went on saying that "there was a 'metropolitan reading', a will developed in the people to not only look at his/her municipality *per se* but also in relation to the metropolitan area, (considering) the vocation of each municipality within the metropolitan area, and understanding what was expected from it."

The debates of municipal politicians and technicians aimed at coming out with an overall concept of development for the AML. Most of the issues gravitated around needs and location of big infrastructures and facilities, particularly the ones with structuring effects for the region.

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[35] MPAT - *Ministério do Planeamento e Ordenamento doTerritório* - Ministry of Planning.
[36] CCRLVT - *Comissão de Coordenação da Região de Lisboa e vale do Tejo* - Coordination Commision of the Lisbon and Tagus Valley Region.

The growing awareness and knowledge that developed among politicians and technicians of the municipalities of the metropolitan area, due to this process of redefinition of strategic objectives of land use planning and regional development, set up the context for the follow up debate. This represented a new development in the metropolitan area history and a shift in the municipalities concerns, as they became more aware of their regional roles and further realized the need for metropolitan approaches.

Part of the planning effort carried on during this period resulted in the creation of a long needed and debated Metropolitan Area of Lisbon Board[37] (1991), in response to concerns of a growing number of public officials and professionals about managing the area as a whole. Due to its short existence, its meager resources and limited power of intervention, the involvement of this entity in the discussion of location of the new Tagus crossing was quite limited.

Municipal Master Plans (PDMs)

Recently enacted legislation led to the development of Municipal Master Plans which are presently reaching completion. Each one of these plans is directed to the corresponding municipal territory and sets up local objectives, policies and guidelines for land use.

Particularly important is the Municipal Master Plan for Lisbon. Besides being the capital of the region and the country, it is an area of long planning tradition where experts (including from other countries) have conducted urban experiments.

Even before the planning process leading to the recent Master Plan for Lisbon, which included a triad of interrelated plan levels (Strategic Plan, Municipal Plan, Detailed Plans), the electoral campaign of the coalition ruling the municipality since 1989 produced a document that, among other things, stated the need of a second crossing in the region of Lisbon for improving traffic mobility.

A team of professionals were developing the Lisbon Municipal Plan at the same time as the GATTEL was carrying out studies on the new crossing over the Tagus. Professionals working inside the municipality and external consultants formed this planning team. They covered several subject areas namely, urban planning, transportation and environment. Led by an external consultant, this team had as transportation consultant the coordinator of the GATTEL Planning Team. This was relevant because it established a strong relation between both works (the GATTEL study and the Lisbon Municipal Plan).

Professionals working in the Lisbon Municipal Pan were particularly knowledgeable of the dynamics of the town. Therefore, the strategies proposed in the Plan strongly reflect this. The proposals resulted from interrelating land use and transportation. One of the central ideas

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[37] *Junta da Área Metropolitana de Lisboa* - Metropolitan Area of Lisbon Board, created by Law 44/91, 2cd of August.

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[36] CCRLVT - *Comissão de Coordenação da Região de Lisboa e vale do Tejo* - Coordination Commision of the Lisbon and Tagus Valley Region.

The growing awareness and knowledge that developed among politicians and technicians of the municipalities of the metropolitan area, due to this process of redefinition of strategic objectives of land use planning and regional development, set up the context for the follow up debate. This represented a new development in the metropolitan area history and a shift in the municipalities concerns, as they became more aware of their regional roles and further realized the need for metropolitan approaches.

Part of the planning effort carried on during this period resulted in the creation of a long needed and debated Metropolitan Area of Lisbon Board[37] (1991), in response to concerns of a growing number of public officials and professionals about managing the area as a whole. Due to its short existence, its meager resources and limited power of intervention, the involvement of this entity in the discussion of location of the new Tagus crossing was quite limited.

Municipal Master Plans (PDMs)

Recently enacted legislation led to the development of Municipal Master Plans which are presently reaching completion. Each one of these plans is directed to the corresponding municipal territory and sets up local objectives, policies and guidelines for land use.

Particularly important is the Municipal Master Plan for Lisbon. Besides being the capital of the region and the country, it is an area of long planning tradition where experts (including from other countries) have conducted urban experiments.

Even before the planning process leading to the recent Master Plan for Lisbon, which included a triad of interrelated plan levels (Strategic Plan, Municipal Plan, Detailed Plans), the electoral campaign of the coalition ruling the municipality since 1989 produced a document that, among other things, stated the need of a second crossing in the region of Lisbon for improving traffic mobility.

A team of professionals were developing the Lisbon Municipal Plan at the same time as the GATTEL was carrying out studies on the new crossing over the Tagus. Professionals working inside the municipality and external consultants formed this planning team. They covered several subject areas namely, urban planning, transportation and environment. Led by an external consultant, this team had as transportation consultant the coordinator of the GATTEL Planning Team. This was relevant because it established a strong relation between both works (the GATTEL study and the Lisbon Municipal Plan).

Professionals working in the Lisbon Municipal Pan were particularly knowledgeable of the dynamics of the town. Therefore, the strategies proposed in the Plan strongly reflect this. The proposals resulted from interrelating land use and transportation. One of the central ideas

[37] *Junta da Área Metropolitana de Lisboa* - Metropolitan Area of Lisbon Board, created by Law 44/91, 2cd of August.

included the overlay of a new grid system over the existing radial transportation system which represents a serious constraint for traffic mobility in the city. The intention here was to oppose the maintenance of the radial structure of the main transportation lines in the town.

Furthermore, professionals working for this planning process saw a future Tagus crossing not as a vehicle to bring more cars into town, but as a way to improve traffic mobility and as a tool for structuring land use, if well used. It is this understanding, partially resulting from having the coordinator of the GATTEL Planning Team in the Lisbon Master Plan team that made a difference. Professionals in this team became, at earlier stages, more motivated to get involved in the discussions of the future crossings. This implied a greater involvement in debating extensively the possible alternatives for the future bridge anchorage and their effects to Lisbon. Most of the debates were informal discussions carried out among team members while working together.

Transportation plans

Several transportation plans and studies were developed in recent years with incidence in the Metropolitan Area of Lisbon:

- **Lisbon Region Transportation Study (ETRL)[38] (70's)**: It is a comprehensive study of the whole region considering land uses, urban structure and transportation, in particular in what concerns to the infrastructure network and the transportation system. The study was developed by the Department of Terrestrial Transportation[39] of the Ministry of Public Works, Transportation and Communications. It is a "sound document" where it is "the structure of information that is important" (in the words of one of the interviewed professionals). It became a basic reference on information and trends regarding zoning, urban structure and transportation in the Lisbon region.
- **National Road Plan (1985/86):** Of the responsibility of the National Highway Authority[40], this plan included a new national road crossing of the Tagus in *Carregado,* to the west of the *Vila Franca de Xira* bridge, well upstream the river from the estuary. This plan did not specifically consider crossings of the estuary since it was essentially concerned with national road connections.
- **Lisbon Train Interchange Office (GNFL)[41] (1987):** This cabinet was given the responsibility of developing studies of a train connection in the 25th of April Bridge and on a second train crossing of the Tagus estuary. The Office was dependent on the

[38] ETRL - *Estudo dos Transportes na Região de Lisboa* - Lisbon Region Transportation Study.
[39] DGTT - *Direcção Geral dos Transportes Terrestres* - Department of Terrestrial Transportation.
[40] JAE - *Junta Autónoma das Estradas* - National Highway Authority.
[41] GNFL - *Gabinete do Nó Ferroviário de Lisboa* - Lisbon Train Interchange Office.

Ministry of Public Works, Transportation and Communications[42] and had only executive functions, but later on the Minister added planning functions to its mission.

- **Lisbon Region Transport Infrastructure (ITRL)[43] (80's)**: It is essentially a "desk study", important because it updates the Lisbon Region Transportation Study of the 70's and puts together all the infrastructure transportation projects developed for the region by diverse agencies (National Highway Authority, Lisbon Port Authority[44], etc.). It is particularly innovative because it evaluates the underground network, using as consultant a French expert and the Department of Terrestrial Transportation. A computer transportation model is used in the study.
- **Plan for Modernization of Train Services (1988/94):** Approved by the Council of Ministers, it includes the development of a train connection between *Campolide* and *Pinhal Novo,* via *Pragal,* on a lower platform of the present 25th of April Bridge. This plan reflects the concern of the planning entity — the Trains of Portugal Company[45] — with the difficulties that were felt for decades regarding the funding of a new bridge for the train connection between the railway networks North and South of the estuary. The plan resorts to the less ambitious alternative of constructing a train platform in the existing 25th of April bridge.

Importance of the planning effort

The importance of the intensive planning activity that took place recently in the Metropolitan Area of Lisbon for the questions addressed in the present study lies essentially in the role it played in framing the understanding of professionals operating in this region, in raising key issues, in promoting debate among the various players. It is, therefore, of the utmost importance to look to the land use and transportation planning activity, in particular to the plans produced.

The plans developed were used as important sources of information (Lisbon Region Transportation Study (ETRL), Municipal Master Plans (PDMs)), they framed ideas and politics (Regional Land Use Plan for the Metropolitan Area of Lisbon (PROTAML)), they influenced the structuring of analytical and design methodologies (Lisbon Region Transportation Study (ETRL)), they provided information on existing and future expected trends, but most of all they generated debates among the technical and political settings involved in their development (e.g., the *Distrito* of *Setúbal* Development Plan (PIDDS)

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[42] MOPTC - *Ministério das Obras Públicas, Transportes e Comunicações* - Ministry of Public Works, Transportation and Communications.
[43] ITRL - *Infraestrutura de Transportes da Região de Lisboa* - Lisbon Region Transport Infrastructure.
[44] APL - *Administração do Porto de Lisboa* - Lisbon Port Authority.
[45] CP - *Comboios de Portugal* - Trains of Portugal Company.

brought together several municipalities, the Lisbon Region Transportation Study (ETRL) sat at the same table professionals coming from distinct backgrounds, the Regional Land Use Plan for the Metropolitan Area of Lisbon (PROTAML) led municipalities of the Metropolitan Area of Lisbon to create forums of technicians and politicians to debate and reflect on the future of the region). However, they were frequently restricted to the geographical area or to the sector under consideration.

These plans provided substantial amounts of knowledge to the studies carried out by the GATTEL Planning Team. Professionals cared about the information they contain, the policies they propose and the guidelines they offer. These were frequently mentioned by technicians interviewed as acquired knowledge and a source of credible information. Once the GATTEL Planning Team started its operation, most of the plans regarding the Metropolitan Area of Lisbon were extensively used to supply the necessary basis for the study under way.

SPECIAL PROJECTS IN THE AGENDA

There are certain special projects currently under way in the Metropolitan Area of Lisbon that involve big infrastructures and have important land use and transportation impacts besides playing a very important role in shaping the way technicians look growth management issues. The most important an frequently referred in the studies and debates are the Lisbon Airport, the Expo 98 and the Lisbon Sea Port.

Lisbon Airport

Several studies have been developed since 1969, by national and foreign entities, proposing the relocation of the Lisbon airport. Two locations are currently being considered — *Ota,* North of Lisbon, and *Rio Frio,* in *Montijo.* This is an issue of major consequences for discussions of the transportation network in the metropolitan area that gains a further importance in connection to the location of future Tagus estuary crossings, in particular because one of the considered possibilities for the airport location is in the Southern bank of the estuary.

Expo 98

The Expo 98 is a major international exhibition scheduled for 1998 in Eastern Lisbon. Its project led to a strong effort of forcing industries and storehouses out of the area, clearing for development a vast area of land where the Expo constructions are being built. Due to its location in the North bank of the Tagus, this project affects the location of possible future estuary crossings, besides the effects that it has on the problem due to the high visitors traffic it is expected to generate in 1998, including visitors coming by road from the connections with Spain in the South.

Lisbon Sea Port

A project for a major restructuring of the Lisbon Sea Port is also under way under the responsibility of the Lisbon Port Authority, including an extensive development in the North waterfront. This project has consequences for the road network and obvious interferences with possible locations of future estuary crossings.

THE PRESENT SITUATION

Severe traffic congestion

Since the beginning of the 80's the quality of service of the 25th of April Bridge has declined seriously, due to increased traffic and an expansion of rush hour periods traffic jams. The associated severe limiting effects on mobility generated unfair "costs to the user and the community"[46] leading the central government, several local politicians and planning and transportation professionals to agree that a second bridge over the estuary was needed. For instance, the government resolution of 1987 which approved several road infrastructures in the Lisbon Region includes the following:

> "In what concerns to the accesses from the Southern bank to Lisbon, the situation is different. The enlargement of the road platform in the Tagus bridge and the utilization of a lower platform for a train connection remain as possible and probable endeavors.
>
> This does not prevent that, in a longer range perspective, a second road crossing of the Tagus in the region of Lisbon begins to be studied, for which purpose the Ministry of Public Works, Transports and Communications proposes to take the appropriate initiatives."
>
> *(Resolution of the Council of Ministries 14/87, 21st of March).*

On the other hand, in the electoral document of the coalition *(Coligação «Por Lisboa»)* that won the Lisbon municipality election in 1989 it can be read:

> "The *"Coligação «Por Lisboa»"* will give priority to the problems at the regional and metropolitan levels, in collaboration with the other Municipal Councils in order to:
>
> - establish agreements, with the peripheral municipalities interested in "welcoming" offices and diversified services, including those related to tourism and culture, aiming at decentralizing tertiary activities, thus reducing the pressure over the Lisbon central areas;
>
> ...
>
> - program and render compatible the construction of the local intermunicipal road network, the regional road network and a second bridge over the Tagus, in order to improve, with higher priority, the metropolitan ring connections and the local connections between municipalities, reducing the negative impacts of recent disparate decisions like the *Cascais* speedway;
>
> - establish with the peripheral municipalities agreements on projects and programs aiming at reducing the use of individual transportation in the accesses to Lisbon, through the construction of peripheral car parking spaces near the public transportation corridors and the corresponding improvement of transportation interfaces;

[46] Mentioned in the Decree-Law 14A/91.

- promote the offer of mass transportation (railway and subway) in the main metropolitan connections (*Cascais, Sintra, Loures, Vila Franca de Xira* and the South bank);

..."

(*Lisboa Capital Atlântica da Europa - Documento Eleitoral da Coligação "Por Lisboa" Candidata à Câmara Municipal de Lisboa,* 1989)

Efforts to relieve congestion

In 1987, the government created the Lisbon Train Interchange Office (GNFL) with missions regarding the improvement of railway connections in the Lisbon Metropolitan Area that included two actions concerning future train crossings of the Tagus in the Lisbon region: the reinforcement of the 25th of April Bridge to allow for a train crossing in the short range, and a future independent Tagus train crossing in the Lisbon region to establish continuity between the North and South train lines, still assured by a boat connection[47].

As a response to the severe congestion developing in the existing bridge, the government decided to develop a fifth road lane to be operated in any one of the crossing directions, according to the traffic needs. This fifth lane was opened to traffic in July of 1990. At that time, the Minister of Public Works, Transports and Communications announced that the bridge would be reinforced to allow for a train crossing in a lower platform and that a new road bridge would be constructed in the *Montijo* corridor. More recently, it was decided that the 25th of April Bridge reinforcement should also account for the expansion of the upper platform from five to six road lanes.

In January of 1991 the government created the Office for the Tagus River Crossing in Lisbon (GATTEL), under the direct responsibility of the Ministry of Public Works, Transports and Communications, to "develop, coordinate and control the activities needed for the promotion of construction and exploration of a second road crossing of the Tagus in the Lisbon region"[48] including the study of crossing alternatives. The construction of this expensive infrastructure would be feasible by assuring the contribution of EU/EEC funds for its development.

Besides the second road crossing of the Tagus in Lisbon, there is a planned road bridge for *Carregado,* approximately 30 Km from Lisbon upstream the Tagus, away from the estuary and where the river is much narrower. This bridge is intended to respond to the demand for the national North-South road connection across the Tagus avoiding Lisbon. In fact, the National Road Plan[49] proposes a new bridge in *Carregado* to the East of the *Vila Franca de Xira* bridge, aiming to capture the overflowing traffic on this bridge. Both of these crossings, the

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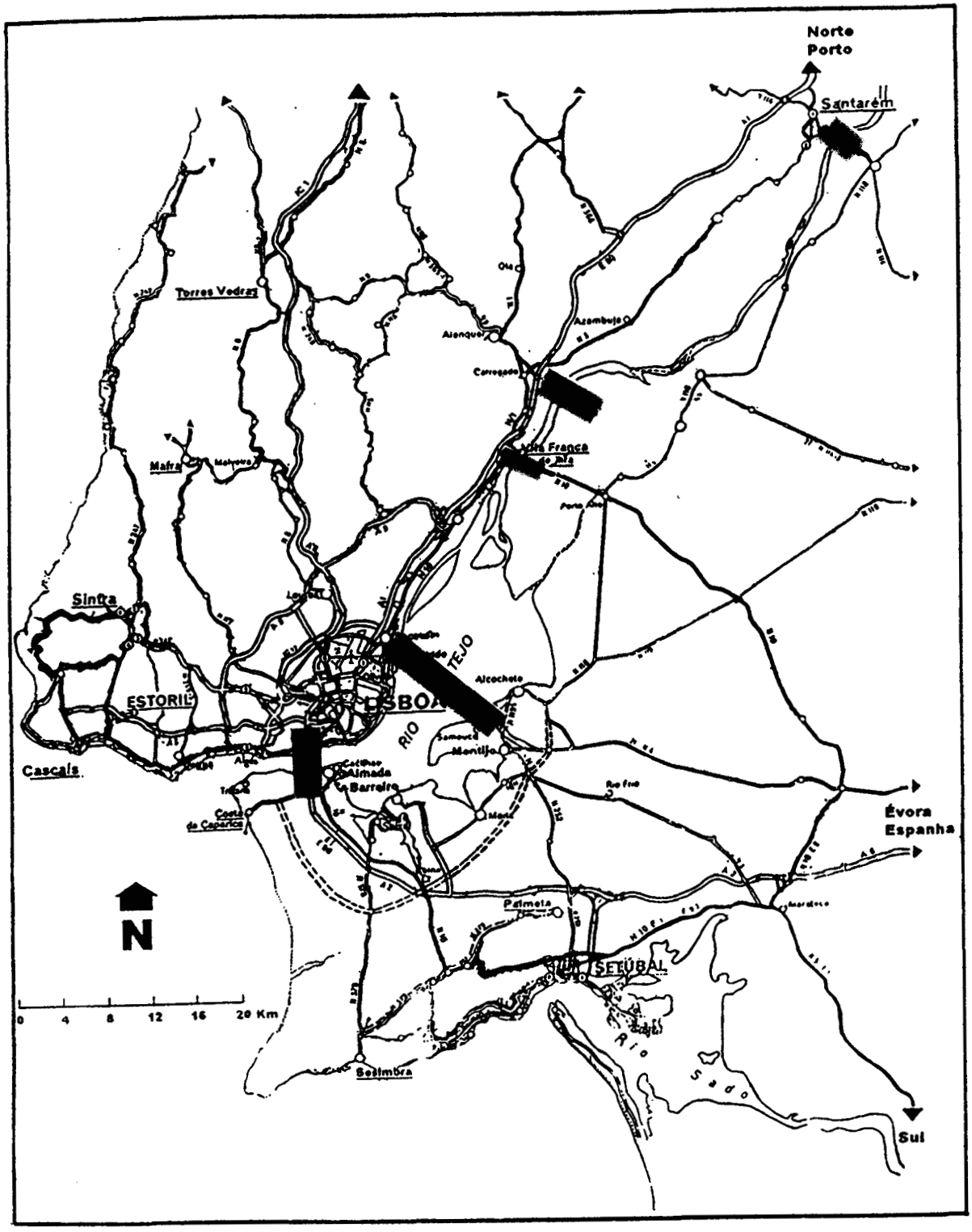
[47] Decree-Law 315/87, 20th of August - the Lisbon Train Interchange Office (GNFL) is made responsible for the "train crossing of the Tagus in the 25th April bridge (...) and promotion, at the long range of the second crossing of the Tagus".

[48] Decree-Law 14-A/91.

[49] Decree Law 145/85.



Source: Adapted from Michelin® , 1995

Existing bridges

Planned bridges

Figure IV.9 - Existing and planned bridges in the AML.

constructed (*Vila Franca de Xira,* 25 kms from the *Sacavém* knot in the North bank) and the proposed (*Carregado,* about 5 kms away from *Vila Franca de Xira*) are located away from the estuary in a narrower river path. Transportation professionals claim that these bridges intend to serve the North-South throughout traffic.

Changed reality

Today Lisbon is no more the tiny capital of the end of the century. Reality has changed over the years. The Southern municipalities went through a substantial growth encouraged by the accessibility provided by the 25th of April Bridge since 1966.

The technological advance that occurred allows for an increased number of competing alternatives for the Tagus estuary crossing.

An extensive transportation network is already operating serving the residents of the whole metropolitan area.

Environmental concerns added one additional factor to the already complex issue.

PUBLIC STRUCTURE AND PROCESS FOR HANDLING THE NEW ESTUARY CROSSING DECISION: THE GATTEL

The GATTEL - Creation and formal structure

In the 25th of January 1990, aware of the need for a new crossing of the Tagus estuary, the Council of Ministers considered essential the development of studies to support the decision. As a result, an inter ministerial working team was created to carry out these studies "due to the numerous implications of the actions required to accomplish the desired goal"[50]. Following this, the government created the Office for the Tagus Crossing in Lisbon (GATTEL)[51], an entity with legal and administrative autonomy operating under the Ministry of Public Works, Transports and Communications that was considered by the government to be the most adequate form to carry out the needed studies in the shortest span of time, including the coordination with projects already under way.

The mission given to the GATTEL in the legislation includes "executing, coordinating and controlling the activities needed to promote the construction and exploration of a second road crossing of the Tagus in the Lisbon Region." Moreover, this legislation mentions that, with the

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[50] Resolution of Council of Ministers, 25th of January, 1990.
[51] GATTEL - *Gabinete da Travessia do Tejo em Lisboa* - Office for the Tagus Crossing in Lisbon, created by the Decree-Law 14-A/91, 9th of January, 1991.

goal of ameliorating the congestion problem, "the government defined actions to optimize the use of the road existing platform" and that "it is simultaneously under way the implementation of the Integrated Plan of the Road Access to Lisbon" which was approved in 1987[52]. The GATTEL was also given the roles of assuring the cooperation of services and entities involved in the studies and the construction, and of representing the government in all sessions related with the studies and the execution of the work.

This procedure seems to be based on the traditional operation of the Ministry of Public Works, Transports and Communications for carrying on large projects, with the enacted legislation resulting from previous studies developed within this Ministry.

The legislation creating the GATTEL also refers to the Lisbon Train Interchange Office (GNFL), created[53] in 1987, stating that it "is made responsible for the train crossing of the 25th of April Bridge and the promotion of a second train crossing of the Tagus in the Lisbon Region." This description shows a particular concern for sectoring functionally the problems under consideration, attributing to different entities the functions related to the road and the train crossings. However, as mentioned in legislation, attention is called to the need of coordination with other studies being developed.

According to the legislation, the administrative bodies of the GATTEL are the Steering Committee[54] and the Advisory Board[55].

The Steering Committee Chairman is nominated by the Council of Ministers and has four other members representing each one of the following ministries: Ministry of Public Works, Transports and Communications, Ministry of Finances, Ministry of Planning and Ministry of Environment. These elements are nominated by joint agreement of the Minister of Public Works, Transports and Communications and by the Minister of each specific area[56]. The Steering Committee defines the functions of each one of its members. Decisions of this committee are made by majority, and the Chairman has a casting-vote[57]. The Steering Committee Chairman represents the GATTEL externally, calls for meetings, directs them, and assures the deliberations are carried out.

The Advisory Board responsibilities are to comment on issues submitted by the Steering Committee and to provide technical assistance whenever requested by the Steering Committee. According to the initial legislation, it integrates representatives of: the four ministries considered for the Steering Committee, the Ministry of Defense, the Office of Studies of the Ministry of Public Works, Transports and Communications, the Office of Studies of the

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52 Resolution of Council of Ministers 14/87.
53 Decree-Law 315/87, of August 20, 1987.
54 *Comissão Instaladora* - Steering Committee.
55 *Conselho Consultivo* - Advisory Board.
56 Joint dispatch A 15-91, XI.
57 *voto de qualidade* - casting vote.

Ministry of Planning, the Coordination Commission of the Lisbon and Tagus Valley Region (CCRLVT)[58], the Lisbon Municipality (CML)[59], the Civil Engineering National Laboratory (LNEC)[60], the Lisbon Port Authority (APL)[61], the Highway Authority (JAE)[62], the Department of Traffic (DGV)[63] and the Department of Terrestrial Transportation (DGTT)[64]; it is chaired by the representative of the Ministry of Public Works, Transports and Communications, and it may integrate representatives of other municipalities when that appears appropriate in the course of the studies.

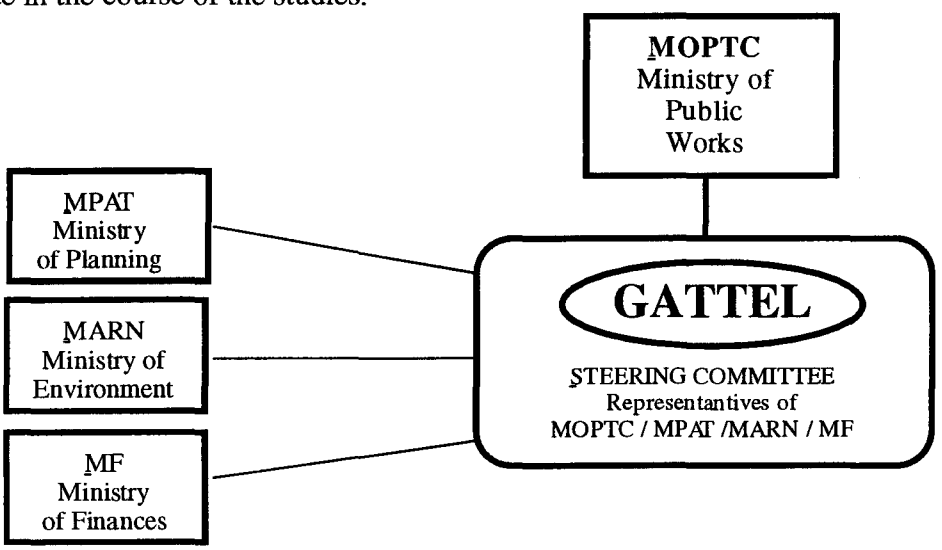

Figure IV.10 - The GATTEL organizational structure:
Steering Committee and the Ministries represented

In May of 1991, the Advisory Board was enlarged to finally include representatives of the following municipalities: *Almada, Moita, Oeiras* and *Vila Franca de Xira.* In October of 1994 representatives of the municipalities of *Alcochete, Barreiro, Loures, Montijo* and *Setúbal* were added, accounting for the representation of all the municipalities in the Tagus banks of the Metropolitan Area of Lisbon.

The technical and administrative support of the GATTEL is assured by a core team of professionals and a permanent clerical staff hired by the Steering Committee.

An interesting feature of the GATTEL is that it integrates representatives of the Ministry of Environment, suggesting a special concern with the link of the environment with the issue at hand. It is the inclusion of this Ministry that seems a distinct feature from what is common practice in the area of transportation and public works in Portugal.

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[58] CCRLVT - *Comissão de Coordenação da Região de Lisboa e Vale do Tejo* - Coordination Commission of the Lisbon and Tagus Valley Region.
[59] CML - *Câmara Municipal de Lisboa* - Lisbon Municipality.
[60] LNEC - *Laboratório Nacional de Engenharia Civil* - Civil Engineering National Laboratory.
[61] APL - *Administração do Porto de Lisboa* - Lisbon Port Authority.
[62] JAE - *Junta Autónoma das Estradas* - National Highway Authority.
[63] DGV - *Direcção Geral de Viação* - Department of Traffic.
[64] DGTT - *Direcção Geral dos Transportes Terrestres* - Department of Terrestrial Transportation.

Internal structure and tasks carried out

In the first stage of operation of the GATTEL, specialists directed mainly to design and building suggested that professionals in planning and transportation management should be hired to coordinate and develop the studies for supporting the decision on the location of the new bridge. For this purpose, the Steering Committee decided to hire a transportation manager who had been previously involved in transportation studies in the Metropolitan Area and was a consultant for several municipalities in the region. A group of professionals — the GATTEL Planning Team — was assembled under his leadership, by the end of 1990 and the beginning of 1991. The members of this team were selected through informal networking, and included a traffic engineer, a land use planner and an environmental engineer. With the exception of this last member, brought in by the representative of the Ministry of the Environment, the team had done extensive consultant work in the region and had a good experience of working together.

The GATTEL Planning Team worked under the supervision of the GATTEL Steering Committee which had, among other roles, to assure a regular link to the Ministry of Public Works. As stated by one of the interviewees, they sent each fifteen days working reports to the this Minister. The representatives of each of the Ministers, with seats in the Steering Committee were responsible to keep their respective Ministers informed.

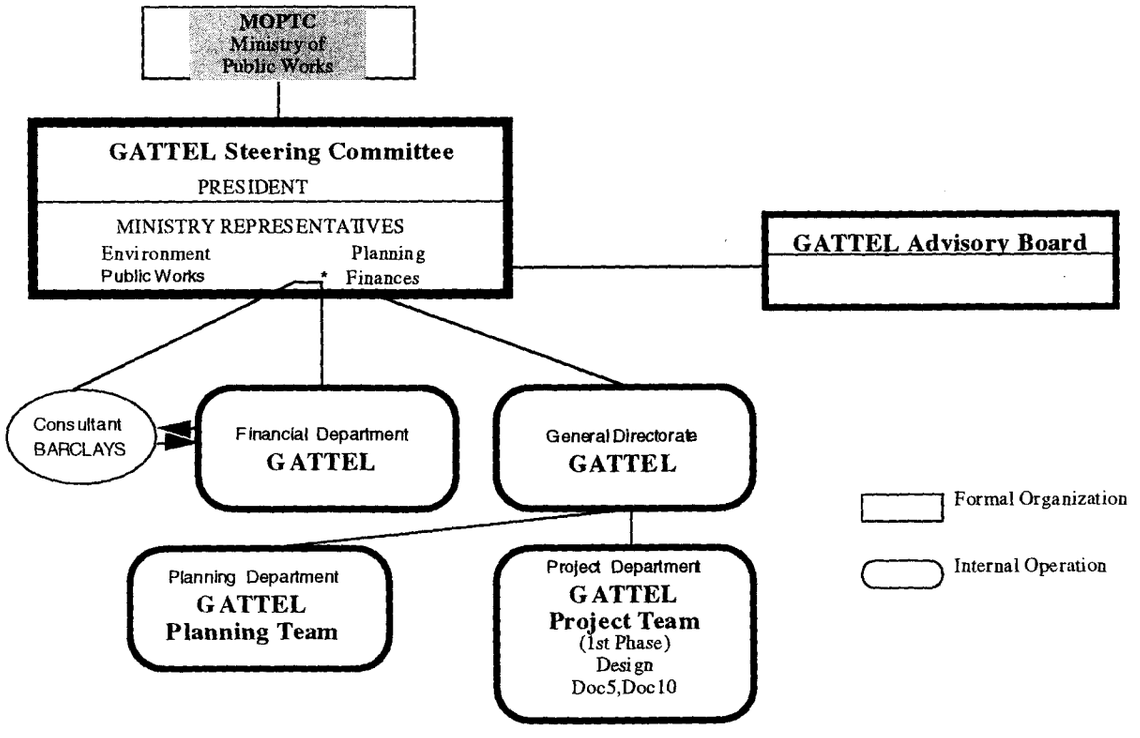

Figure IV.11 - Formal organization and internal operation of the GATTEL

Generous funding was made available by the Steering Committee to the Planning Team in order to provide for the development of studies in a short period of time and with the best information available. The GATTEL used part of these funds to hire external consultants, part to gather existing reports and to update information. They had to comply to the tight dates imposed, and therefore resources were available to speed up the process.

The Planning Team appears to have gathered the basic adequate capabilities for the task at hand, involving specialists on the main issues under consideration for the location studies. The whole process was initiated under consensus, with accepted tight due dates. There was a general belief that the technical support for the decision on the location was achievable in a short period of time since there were two alternatives being considered *(Algés* and *Montijo)* which could be easily compared, admitting the study as a ready-solution case.

Immediately after being created, the GATTEL Planning Team developed efforts aiming to collect all the relevant existing information and hired consultants whenever necessary to cover specific areas to be addressed: transportation, traffic, land use and environment. As a result, by mid 1991 a report was produced compiling and summarizing the technical suggestions[65].

The GATTEL Planning Team was the core of a larger structure, encompassing:

- Planning Team: responsible for assuring the work continuity, this team set up the methodology and carried out the various phases within tight due dates, to assure results in one year period; the operation was organized on a model similar to a private firm operation, and reports were scheduled to be issued at the end of each key phase.

- Data Base Team: formed by assistants responsible to collect needed data on transportation, supply/demand, socio-economic, population, employment, etc.

- Consultants: several consultants were hired in certain instances of the studies, depending on the issues under consideration and the fields of expertise; some of the consultants were more permanent than others in the follow up.

- Dutch Consultant: invited to develop a traffic fluxes study and to run a cost benefit evaluation based on a computer model that had been previously tested in Portugal under the Department of Terrestrial Transportation[66]. This consultant was supplied information compiled by the data base team. The underlying reason for hiring the consultant was his previously acquired knowledge about the transportation issues in the Lisbon region while working for the Department of Terrestrial Transportation, a highly desirable factor due to the need of speeding up the process.

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[65] *Avaliação dos Corredores: Conclusões e Recomendações, Nova travessia rodoviária sobre o Tejo na região de Lisboa*, GATTEL, Documento 6, September 1991.

[66] DGTT - *Direcção Geral dos Transportes Terrestres* - Department of Terrestrial Transportation.

All these groups were supervised and coordinated by the transportation manager who led the Planning Team. To keep track of all the activities and complying with the tight due dates that were programmed, the Planning Team developed a very detailed methodology at the beginning explicitly defining the due dates, tasks and documents to be attained for each phase (see GATTEL Phasing).

This phasing shows a particular concern with separating the different levels of intervention, establishing clearly the responsibilities of the technicians and what was to be submitted to the decision makers, and therefore to the political setting (see GATTEL Methodology).

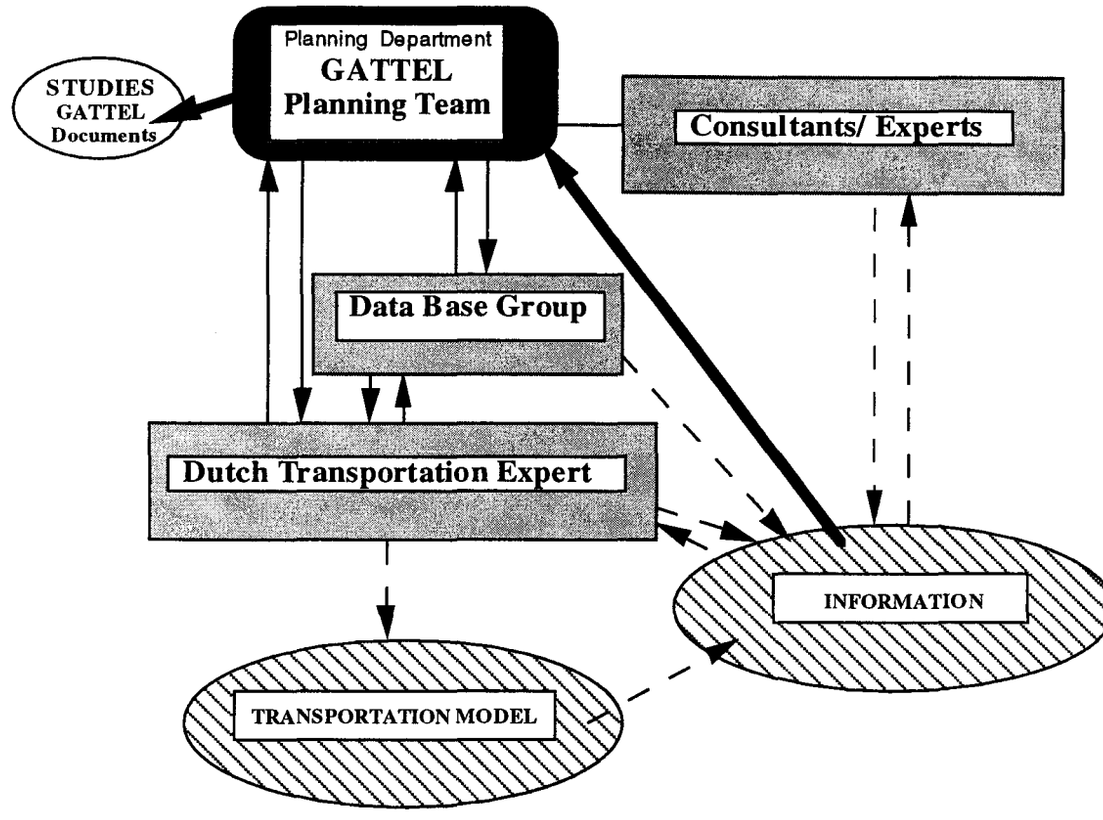

Figure IV.12 - GATTEL Planning Team organization of activities

A substantial number of the consultants, besides producing specific reports that were requested, participated in discussions with the Planning Team, and sometimes with other professionals working in the GATTEL, about the information being collected and analyzed, namely on geomorphology, physical geography, transportation infrastructures, socio-economics and environment. The information considered by the Planning Team to be relevant for the study was collected and interpreted in an exhaustive report, summarized in Document 4 of the GATTEL. Several meetings were held either with just the team members, or with other invited experts, about positions, concepts, advantages and disadvantages of the several options considered.

The work started in an uncertain context regarding several key issues, namely the desired priority by the central administration between the two objectives stated in the legislation (congestion and North-South National crossing) that was never defined, decisions on the location of some planned infrastructures for the area (e.g., airport, train crossing of the Tagus). This ambiguity is recognized in Document 2 of the GATTEL which states that "without orientation guidelines clearly defined"[67].

Ingrained in the legislation that created the GATTEL[68] are several relevant issues that were frequently explored in arguments emerging afterwards:

a) Road capacity / strangling of economic development

The legislation states that there is a need to substantially increase the road crossing capacity of the Tagus, to avoid the "strangled economic development of the region and the country"

b) North - South connection / accessibility to Spain

The legislation attributes explicit importance to the North South connection and the accessibility to Spain stating "due to the importance of the North-South connection and the accessibility to the central and Southern part of Spain"[69]

c) Congestion / undue costs to user and community

According to the legislation, the declining of service level is due to congestion generating "undue effects for the user and the community in terms of costs of transportation"[70]

d) Train crossing at the responsibility of another entity

Moreover, legislation recognizes that the train crossing of the 25th of April bridge and the second train crossing are of the responsibility of the Lisbon Train Interchange Office - GNFL[71].

e) Justification of the need of studies

The legislation refers to the need of "the government to develop the studies necessary to make a decision about the second road crossing of the Tagus river in the Lisbon Region in the context of the transportation system and the land use planning of the Region and the Country."

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[67] *Metodologia de Avaliação dos Corredores, Nova travessia rodoviária sobre o Tejo na região de Lisboa,* GATTEL, Documento 2, May 1991.
[68] Decree-Law 14A/91.
[69] *Nova travessia rodoviária sobre o Tejo na região de Lisboa,* GATTEL, June 1993.
[70] *Memorando Síntese: Trabalhos Desenvolvidos, Nova travessia rodoviária sobre o Tejo na região de Lisboa,* GATTEL, Documento 13, July 1993.
[71] GNFL - *Gabinete do Nó Ferroviário de Lisboa* - Lisbon Train Interchange Office.

Legislation problem framing

The new bridge is seen to provide a greater road capacity and a support for economic development. The legislation[82] established as a goal "to increase substantially the road capacity over the Tagus in the Lisbon region", connecting it with effects on development by stating that "existing studies reveal the need to, in the short range, increase substantially the crossing capacity of the Tagus by road traffic in this region, to avoid negative effects on the economic development of the region and even the country, due to the importance of this crossing in the North-South connections." The developmental concerns within the whole system of transportation and land use planning in the region appear stressed in the legislation when it calls "for the decision on a second road crossing of the Tagus river in the Lisbon Region ... in the context of a system of transportation and land use planning of the region and the country."

It is possible that the government, and the Ministry of Public Works in particular, were convinced that all the necessary studies were done, specially on alternative locations and environmental impacts. The legislation states that there are already studies available, particularly about alternative locations and environmental impacts. Curiously, when the GATTEL specialists where asked about specific previous studies on the location and construction of the new bridge, they did not show to know them. They knew well, however, the several studies developed for the region for other purposes[83] and used them in building up the characterization of the region and as a source of basic data that was updated with new information.

Formal methodology and phasing as stated in the GATTEL methodology

As stated by the GATTEL[84], the official methodology and phasing were as follows:

1st phase - Baseline conditions, institutional model, coordination with other studies

This phase is for the development of studies leading to the definition of the possible corridors and the selection of the new crossing location, following the description in the legislation[85]:

(1) "Promoting traffic, geological, geotechnic and environmental studies considered necessary for submission of a proposal for the crossing location, including accessibility network in both banks, in the context of national and international road and train

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[82] Decree-Law 14-A/91.

[83] Lisbon Region Transport Infrastructure (ITRL), Lisbon Region Transportation Study (ETRL), *Distrito* of *Setúbal* Development Plan (PIDDS).

[84] *Memorando Síntese: Trabalhos Desenvolvidos, Nova travessia rodoviária sobre o Tejo na região de Lisboa,* GATTEL, Documento 13, July 1993.

[85] Decree-Law 14-A/91.

connections, land use planning, protection of the environment and navigation conditions in the Tagus";

(2) "Carrying out an analysis of the various institutional models for the construction and operation of the enterprise, proposing the most advantageous solution";

(3) "Assuring the coordination with the studies under way in the Lisbon Train Interchange Office (GNFL) regarding the development of the second train crossing of the Tagus in the Lisbon Region."

2nd phase - Public consultation

Public consultation started in the 26 th of October, 1991, during a period of 45 days, regarding only the *Olivais-Montijo* option, in the sequel of the decision[86] by the Minister of Public Works, Transports and Communications, in September 26, 1991, of pursuing the works for the option *Olivais-Montijo* (West corridor, alternative B). The GATTEL states[87] that this public consultation was done "in accordance with Community Directives and national legislation." However, the restriction to just one of the location alternatives was challenged by the environmental associations on the grounds that the application of the Environmental Impact Assessment legislation would imply public consultation regarding the choice between possible location alternatives.

Previously, in March/April 1991, the GATTEL had initiated contacts with several entities to debate the proposed alternatives. According to the GATTEL[88], this involved about 90 entities that, in one way or another, had information, had participated in studies and, directly or indirectly, would be interested in a new crossing over the Tagus river. By May/June 1991 the first news on the studies developed by the GATTEL regarding location alternatives appeared in the media.

Although, no document was made available identifying the entities that were contacted at this stage, it can be inferred from the interviews conducted that they were mainly specialists working in the region, municipality technicians and politicians.

3rd phase - Development of detailed studies on the chosen option

This phase considers the development of more detailed studies, regarding the choice of the best alternative in the selected corridor.

4th phase - Preparation of the documents for the tendering regarding the construction project, call for bidders, and signature of the project and building contract.

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[86] Dispatch 108/91, 26th September 1991, Minister of Public Works, Transports and Communications (MOPTC).

[87] *Memorando Síntese: Trabalhos Desenvolvidos, Nova travessia rodoviária sobre o Tejo na região de Lisboa,* GATTEL, Documento 13, July 1993.

[88] *Memorando Síntese: Trabalhos Desenvolvidos, Nova travessia rodoviária sobre o Tejo na região de Lisboa,* GATTEL, Documento 13, p.7, July 1993.

5th phase - Supervision of the project and construction, ending with the completion of the construction expected for March 1998.

Up to the end of the 4th phase, the Advisory Board met very few times (2 to 3 times according to the people interviewed), suggesting a reduced influence of this board in the process. Considering the number of actors and interests within the metropolitan area, emerging during the debates, the Advisory Board seems to be rather restricted, without much room left to other entities besides the municipalities.

Studies developed by the GATTEL

Between 1990 and 1992, the GATTEL developed a set of documents for supporting the decision on the location of the bridge. Two of them are of special relevance, partialy because they were widely used by the people involved in the debates (e.g., environmental associations): Document 4 - Evaluation of the Corridors - Identification and evaluation of the effects (September 91) and Document 6 - Evaluation of the Corridors - Conclusions and recommendations (September 91).

This description refers mostly to the process as it is described in the GATTEL methodology document. However, the implementation and follow up of the methodology revealed to be much more complex and are described in a later section.

Table IV.3 - Documents developed by the GATTEL

Document	Title	Date
1	Preliminary Identification of the Corridors to be Studied	Apr 91
2	Methodology for Evaluation of the Corridors	May 91
3	Characterization of the Situation	Nov 91
4	Evaluation of the Corridors	Sep 91
5	Presentation of the Layouts	Jul 91
6	Evaluation of the Corridors. Conclusions and Recommendations	Sep 91
7	Impact Evaluation	
8	Socio-economic Scenarios	Jul 92
9	Traffic Analysis	Jul 92

Table IV.4 - Contents of documents developed by the GATTEL

DOCUMENT	Description
1 - Preliminary Identification of the Corridors to be Studied April 91	Identifies and characterizes the preliminary corridors, based in the analysis of the existing and planned infrastructure networks, taking into consideration the existing constraints of the biophysical system and existing facilities or infrastructures. For example, one GATTEL technician said that the corridor connecting Lisbon to the location of the Air Base of *Montijo* is shown not to be feasible. This was later confirmed by another GATTEL technician who added that this alternative was suggested to the Minister and received a negative response, as the peninsula of *Montijo* considered a "hard constraint", and should not be viewed as a possible anchorage. The GATTEL considers for each corridor the public transportation mode (road and train) with special care in providing a solution for road traffic, as requested by the government. The objective of this document is to provide an underlying basis for the following phases, namely in terms of a preliminary evaluation of impacts associated with each corridor.
2 - Methodology of Evaluation of the Corridors May 91	Describes the methodology to be followed in the evaluation of the three corridors introduced in Document 1. The characterization and the effects due to construction of the alternative corridors are discussed, from the point of view of the biophysical system, land use planning and transportation system. The analysis and evaluation of the effects, jointly with those induced by the construction of the 25th of April Bridge, led the GATTEL Planning Team to the selection of a set of criteria that produced a preliminary proposal of an evaluation chart. The GATTEL Planning Team considered the simultaneous and complementary use of several methods of evaluation, to limit the subjectivity in the evaluation process, giving the necessary flexibility to account for the different evaluation priorities of each actor, entity or social group. The high number and diversity of effects and impacts led to splitting the analysis of the land use planning in the metropolitan area of Lisbon in two components: urban planning and socio-economic system . Aspects of technical, economic and financial viability were also considered. The methodology of evaluation considers six components for the multicriteria analysis: - transportation system - economic development of the AML - land use planning - biophysical environment - technical viability - economic and financial viability. However, none of the GATTEL documents made public reports the application of the multicriteria analysis.
3 - Characterization of the Situation Nov 91	Provides an extensive profile of the whole metropolitan area, to be used as a support for the following studies.
4 - Evaluation of the corridors Sep 91	Describes and evaluates the effects and impacts associated with each one of the corridors. The evaluation is considered within three components: biophysical and quality of the environment, land use planning and transportation systems. An analysis of the associated risks is carried out. (1) biophysical and quality of the environment: Tagus estuary, territorial ecosystems, geological formations and environmental quality factors; (2) land use planning: demography, employment, economic structure, productive system, land use, dependencies/urban network; (3) transportation systems: heavy transportation infrastructures and transportation demand between the two banks.

5 - Presentation of the layouts Jul 91	Presents the specific layouts and connections to the existing road network, projected by the GATTEL. A total of four alternative sketches were developed and studied, one in each corridor, except in the *Montijo* corridor for which two possibilities were considered - the anchorage in the North bank either in *Moscavide* or *Olivais* connecting in the South to *Alcochete*. Although the geological characteristics of the Tagus estuary (mud formation up to 60 meters) call for a preference for structural solutions in bridge, a tunnel alternative was studied in the Eastern corridor, mostly to quantify costs for comparison purposes.
6 - Evaluation of the Corridors. Conclusions and Recommendations Sep 91	Assembles the recommendations supporting a decision on the location of the new crossing. This document was handed in, with the remaining four documents[89], to the four ministries directly involved (MPOTC, MPAT, MARN and MF). The final chapter of recommendations, signed by the Steering Committee, is only loosely related to the preceding chapters, attributing the same importance to two alternatives that appear in different levels in the document main body (*Barreiro* corridor and *Montijo* corridor - alternative B). These recommendations were seriously challenged by several entities, particularly the environmental associations, generating conflict that received extensive coverage in the media and led to considerable public debate. On the face of the recommendations, the Minister of Public Works, Transports and Communications decided[90] for the a road crossing in the *Montijo* corridor (between *Olivais* and *Montijo* - alternative B). Disagreements, namely with the Commissioner for Expo 98 who realized that one of the bridge pillars was going to fall in the waterfront of the area, led the Minister to shift his decision to the other possibility that had been considered for the *Montijo* corridor (alternative A connecting *Sacavém* to *Montijo-Grilo)* which was left out from the recommendations of the GATTEL Steering Committee. This decision was later on supported by a formal resolution of the Council of Ministers[91], but not before being challenged by several ministers and the professional community at large.
7 - Impact Evaluation	Analyzes and evaluates the main impacts of the physical implementation of the two alternatives in the *Montijo* corridor.
8 - Socio-economic scenarios Jul 92	Characterizes the population and employment scenarios for the year 2011.
9 - Traffic Analysis Jul 92	Analyzes and provides projections of traffic supply and demand for 1991 and 2011, for the alternatives considered.
10 - Sketches of the alternatives	Describes the two alternatives for the *Montijo* corridor, considering the main characteristics and impacts, including several anchorage possibilities in the South bank.
11 - Eastern corridor. Evaluation of alternatives Jul 92	Summarizes the results of the studies presented, emphasizing the main aspects of each one.
13 - Studies Developed Jun 93	Summarizes the series of studies developed by the GATTEL to support the decision on the crossing location.

More documents have been developed in the meantime. However for the issue of the location the relevant documents are from 1 to 6.

[89] Document 6 states that Document 3 was being finalized to be handed in shortly.
[90] Dispatch 108/91, September 26, 1991, Minister of Public Works, Transports and Communications.
[91] Decree-Law 220/92, October 15, 1992.

The GATTEL Planning Team work methodology

The GATTEL Planning Team accepted a very tight phasing. When asked why they accepted such an enormous task to be developed under short strict deadlines, one of the members of the team said that at the outset there was the conviction that their assignment was much easier. There were basically two alternatives, the *Montijo* and the *Almada* corridors, and a conviction within both the Steering Committee and the Planning Team that the *Montijo* corridor provided the best alternative, with the other being implicitly assumed just for the sake of comparison, as one of the professionals stated in the interview. It was thought to be a "piece of cake" straightforward study between two alternatives, reflecting a generalized consensus on the solution at the outset.

Under this scenario the team saw its mission as a simple assignment of assembling data and technical advising the Minister responsible for making the decision, as one of the members of the Planning Team put it.

The work methodology of the GATTEL Planning Team was a key feature in the whole process. It was accepted by most of the interviewed as an efficient working methodology for the short span of time available to develop the study, and confirmed by the enormous task accomplished in such a short period of time. It included innovation in comparison with the usual procedures in similar situations. Furthermore, differently from the usual practice in works of this type in the area of transportation, which are frequently developed sectorially, the GATTEL considered environmental concerns in accordance with EU/EEC requirements, as it is clearly stated in the written documents[92].

A detailed organizational chart for the Planning Team tasks was prepared by its coordinator and followed during the work assignments. As shown in Figure IV.13, it depicts the decision levels, phasing and documents to be issued.

Besides the organization of a team working simultaneously in several fronts under continuous coordination, as described above, it was also necessary to analyze the possible methodologies and adapt them to the existing time constraints. Therefore, the methodology mostly follows the usual procedure in these cases, but when it gets to the development of alternative bridge crossings it introduces a change.

In fact, instead of identifying specific crossings[93] the GATTEL Planning Team starts by identifying corridors[94] where possible crossings could be designed. These corridors would

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[92] "evaluating environmental risks associated with the crossing as, in agreement with the European Community Council Directive of June 27, 1985, related to the evaluation of effects of certain projects in the environment, all the phases of the study to develop for the project implementation should be submitted to that type of evaluation" (*Evaluation of the corridors,* GATTEL, Document 4, p. 1.1, September, 1991).

[93] Specific bridge crossings are assumed here as having the same meaning as alternatives (to use the language of the GATTEL Planning Team).

[94] Corridors are considered here as pathways, channels, or connection strips within which one or more specific crossing alternatives could be located.

then be studied and compared. Once the best corridors were chosen, the next step would be to identify specific possible crossings that were to be further evaluated afterwards. The introduction of this innovative procedure in bridge location studies emerged out of the need to speed up the process, after studying methodologies followed for the decision on the location of similar projects in other countries which would lead to a longer study period.

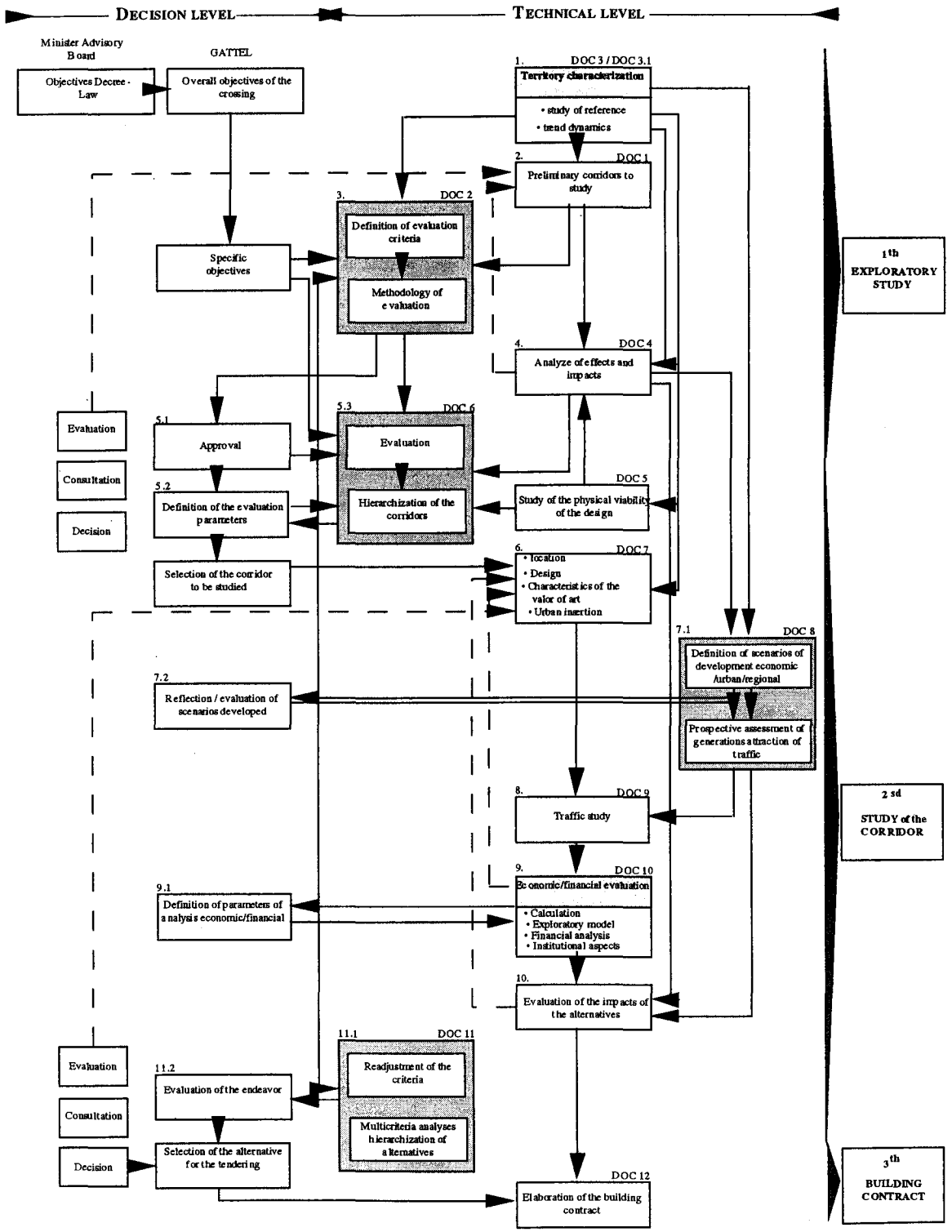

Figure IV.13 - The GATTEL phasing chart

It was the conviction of the coordinator of the Planning Team that the corridor analysis could speed up the process by considerably reducing the number of bridge crossings to be studied in great detail, through the concentration of efforts in the most desirable locations initially identified at the corridor level. As the study of each specific crossing alternative is very time consuming, a reduction of the possible alternatives to corridors selected in a previous stage was expected to reduce the overall time needed.

Methodology for the development of alternatives and selection of locations

Conflicts, misunderstandings and ambiguity created during the process resulted from unclear understanding of the proposed methodology for the development and selection of alternatives. A sound knowledge of the methodology contributes to understand some of the ambiguity and conflicts that arose during the process.

In evaluating the impacts of possible Tagus crossings, the GATTEL Planning Team considered a study area that contains the Metropolitan Area of Lisbon (AML). However, for definition of the corridors a restricted area was selected, integrating the Tagus estuary in Lisbon from the boundary line of the Natural Reserve of the Tagus Estuary to the mouth of the Tagus at *S. Julião da Barra-Trafaria.* (see Figure IV.14).

Location alternatives

The GATTEL Planning Team narrowed down the feasible crossing connections to three possible corridors between the two banks[95]. They were:

(1) the West corridor, about 2.6 km long, linking *Algés* to *Trafaria;*

(2) the central corridor, about 8 Km long, linking *Chelas* to *Barreiro;*

(3) the East corridor, about 8 km long, linking *Olivais/Moscavide* to *Alcochete/Montijo.*

The alternatives are distant from the present bridge, respectively, 4 Km, 8 Km, and 12.5 Km to 14 Km.

The corridors were analyzed from the three main points of view[96]: biophysical, land use and socio-economic, and transportation.

The central corridor was predicted to register the smallest biophysical negative impacts while the East corridor would register the highest negative impacts, in particular due to its proximity to the Natural Reserve of the Tagus Estuary.

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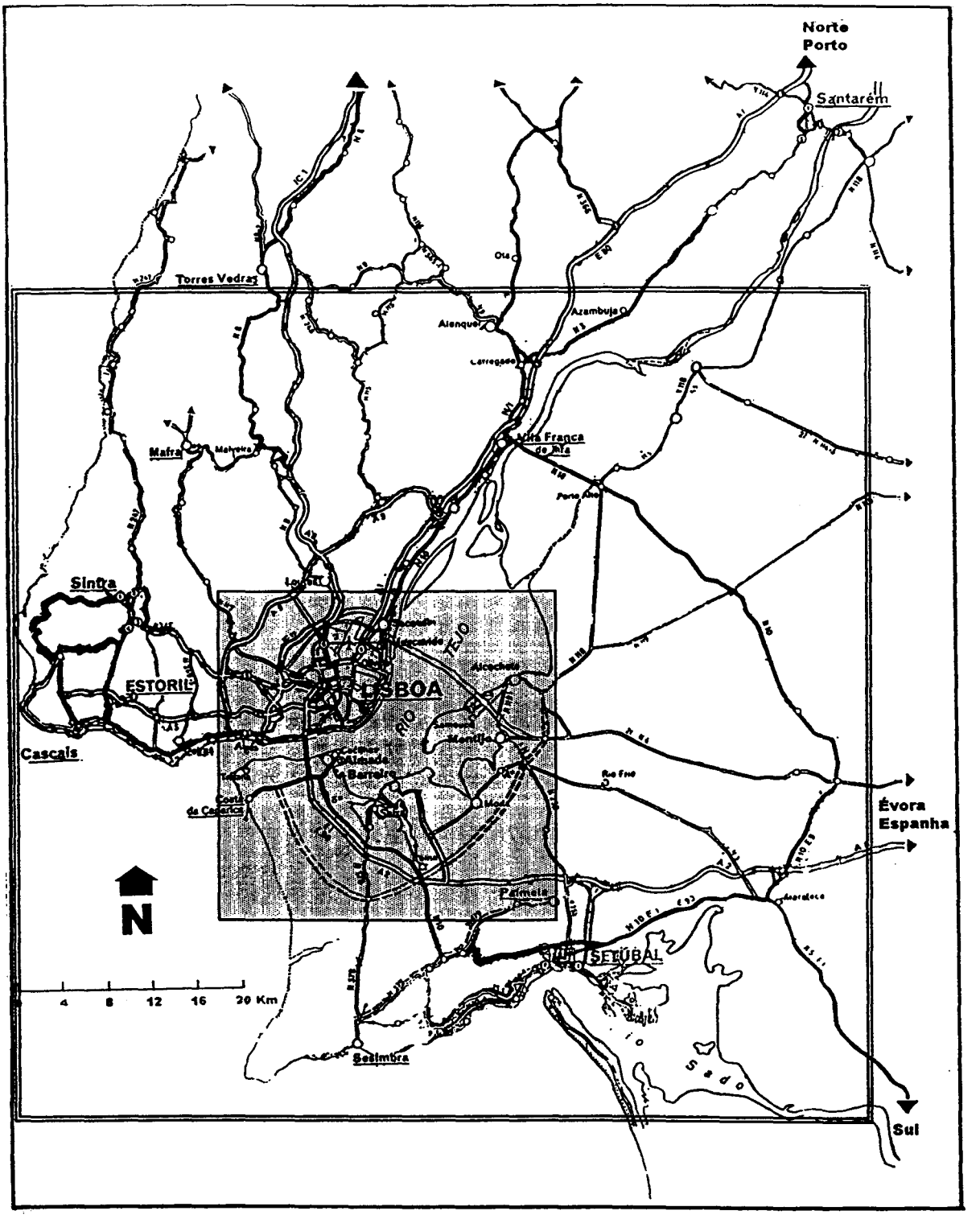
[95] *Preliminary Identification of the Corridors to be Studied,* GATTEL Document 1, April 1991.
[96] *Evaluation of the Corridors,* GATTEL Document 4, September 1991.



Source: Adapted from Michelin® , 1995

Figure IV.14 - Restricted and expanded study area.

From the point of view of land use and socio-economic system, the central corridor appeared to be the best choice on the criteria of addressing a greater variety of interests. It was a good alternative to respond to present crossing traffic demand, enhanced "urban approximation" of the two banks, favored urban requalification of the Southern bank waterfront and functional upgrading of the deprived Eastern part of Lisbon, fitted in the strategies of the Regional Land Use Plan for the Metropolitan Area of Lisbon - PROTAML. While the East corridor was worst. It was an insufficient response to the present crossing traffic demand, induced greater urban sprawl, required extensive reassignment of land uses requiring heavy infrastructuring, was incompatible with strategies of the Regional Land Use Plan for the Metropolitan Area of Lisbon - PROTAML.

For the transportation system, the conclusions in the document were: the West corridor would best solve the congestion problems felt in the existing bridge without changing the present river crossing influence areas; the central corridor would complement the present river crossing influence areas while, at the same time, providing for congestion relief in the existing bridge and for a good connection with the existing railway system in both banks of the river; the East corridor would not contribute for the solution of the congestion problem in the existing bridge, it would provide a better connection between the Eastern and Northern parts of Lisbon and the Eastern areas of the South bank assuring for increased accessibility to the new Lisbon airport in the case of its location at *Rio Frio* in the South bank while exhibiting potentialities for a railway crossing. Therefore, also from the point of view of the transportation system, the East corridor seems to be the least advantageous.

The financial viability of a crossing in three corridors was also considered and led to the following conclusions[97]: in case of adoption of a private sector toll concession for the new bridge, the existing bridge should be included in the concession; for road crossings, the toll levels for the three corridors would be within acceptable ranges, with a 14% increase in the central corridor and a 22% increase in the East corridor relative to the West corridor).

In each one of the corridors, the Planning Team analyzed several possibilities for specific crossings[98]:

(1) in the West corridor two possibilities were considered in the North bank, but only one of them was selected for further study due to the negative features of the other in environmental and landscape impacts;

(2) in the central corridor, three possibilities in the North bank were initially analyzed, one of them being a tunnel crossing, but all of them were abandoned due to their urban, landscape or patrimonial implications; a fourth possibility was then developed leading to

[97] *Evaluation of the Corridors,* GATTEL Document 4, September 1991.
[98] *Presentation of the Layouts,* GATTEL Document 5, July 1991.

two possible connections in the South bank which were reduced to one due to the restrictions imposed by the military air base existing in the *Montijo* Peninsula and the difficulties arising from the urban development planned by the *Moita* municipality;

(3) in the East corridor, two crossings were studied: alternatives A and B, connecting *Sacavém* and *Olivais,* respectively, to the same point in the South bank; for alternative B, a possibility of a tunnel crossing was also considered.

Summing up: in both the West and central corridors only one crossing was further studied, while in the East corridor two crossings were pursued (alternatives A and B); for comparison purposes, a tunnel crossing was studied for alternative B in the East corridor, and a mixed road and railway crossing was analyzed in the central corridor.

In September of 1991, the Steering Committee issued a document[99] with its conclusions/recommendations regarding the crossing location, including the following statements:

- a new bridge crossing should be considered, since the tunnel crossing involves higher costs than road crossings and its use has inherent restrictions (pp.12, 19);
- the mixed road and railway crossing, studied for the central corridor, would not be justified in the short and middle ranges since the railway connection already decided for the existing bridge provided an adequate solution, and a new road and railway bridge would incur in higher costs (pp.13,15);
- the West corridor provides for the least attractive crossing solution, taking into account its weaknesses and potentialities[100];
- the central corridor would be the best location, if priority is given to land use (development) concerns associated with a new urban link across the river;
- the East corridor, alternative B, would be the most favorable location, if the priority is given to national and inter-regional links, and to the integration in the National Road Plan structure.

The Document 6 of the GATTEL, signed by the Steering Committee with the conclusions summarized above, generated considerable debate within the technical community. The conclusions of this document are ambiguous, leaving it open to the Ministry of the Public Works, in alternative, to chose the *Montijo-B* or *Barreiro* option. This chapter is seen by several individuals to be in disagreement with the argumentation of the remaining chapters. Moreover, the decision for the alternative B in the *Montijo* corridor is considered by several technicians as the worst option on the basis of the GATTEL technical studies.

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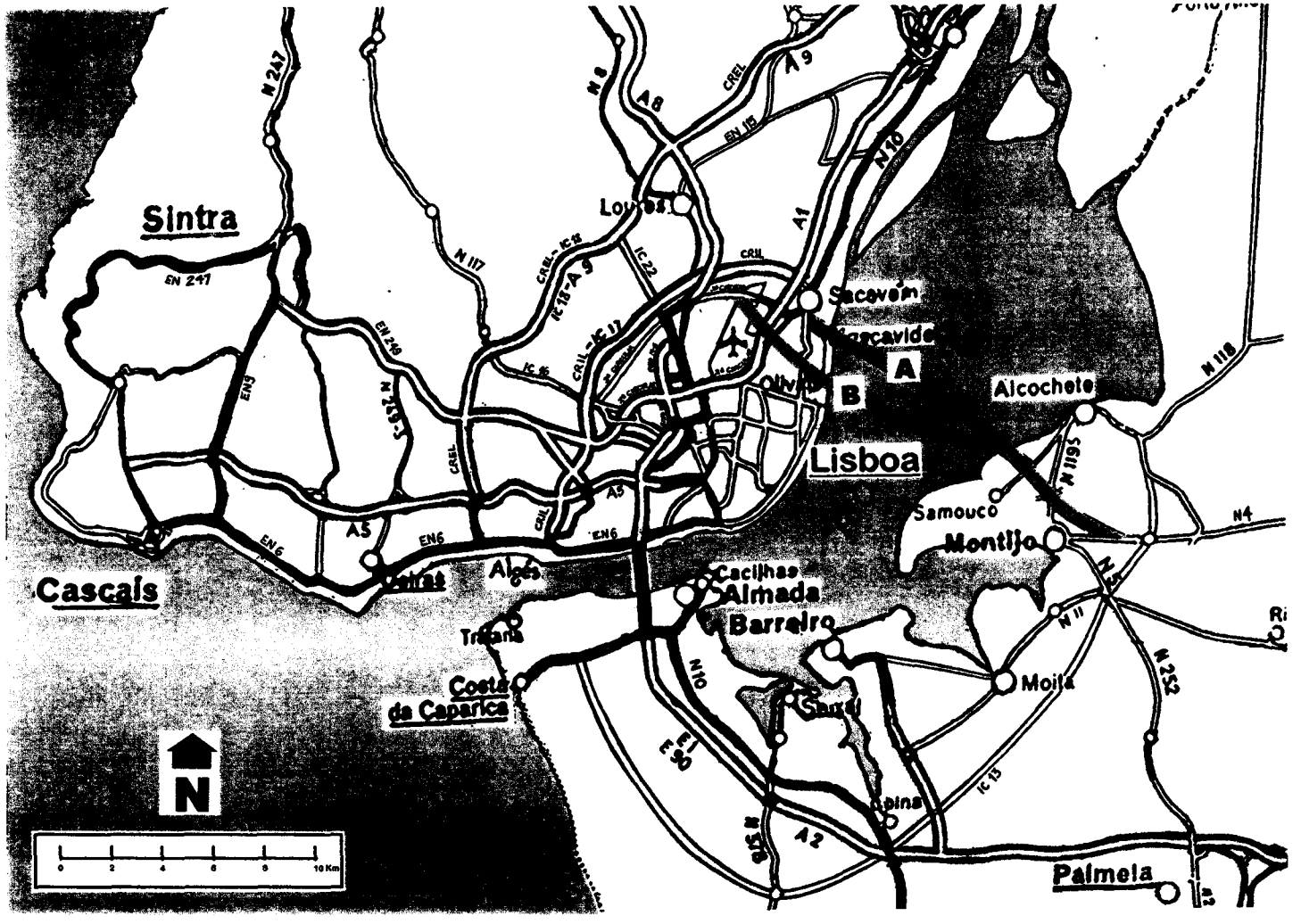
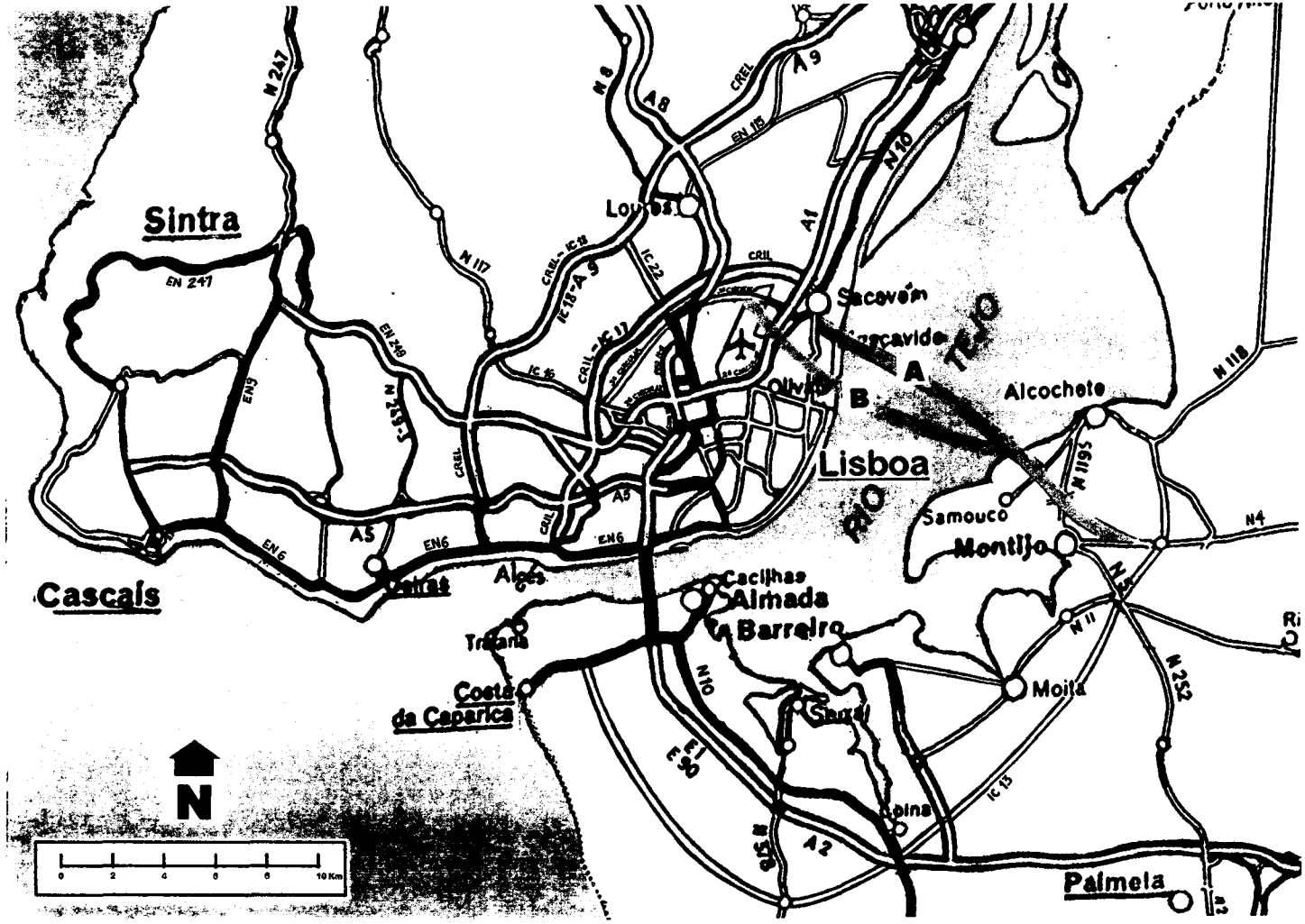
[99] *Evaluation of the Corridors. Conclusions and Recommendations,* Document 6 of GATTEL , September 1991.

[100] "repeats and unfolds the corridor corresponding to the actual crossing without gains in quality" (GATTEL Doc.6, pp.7).



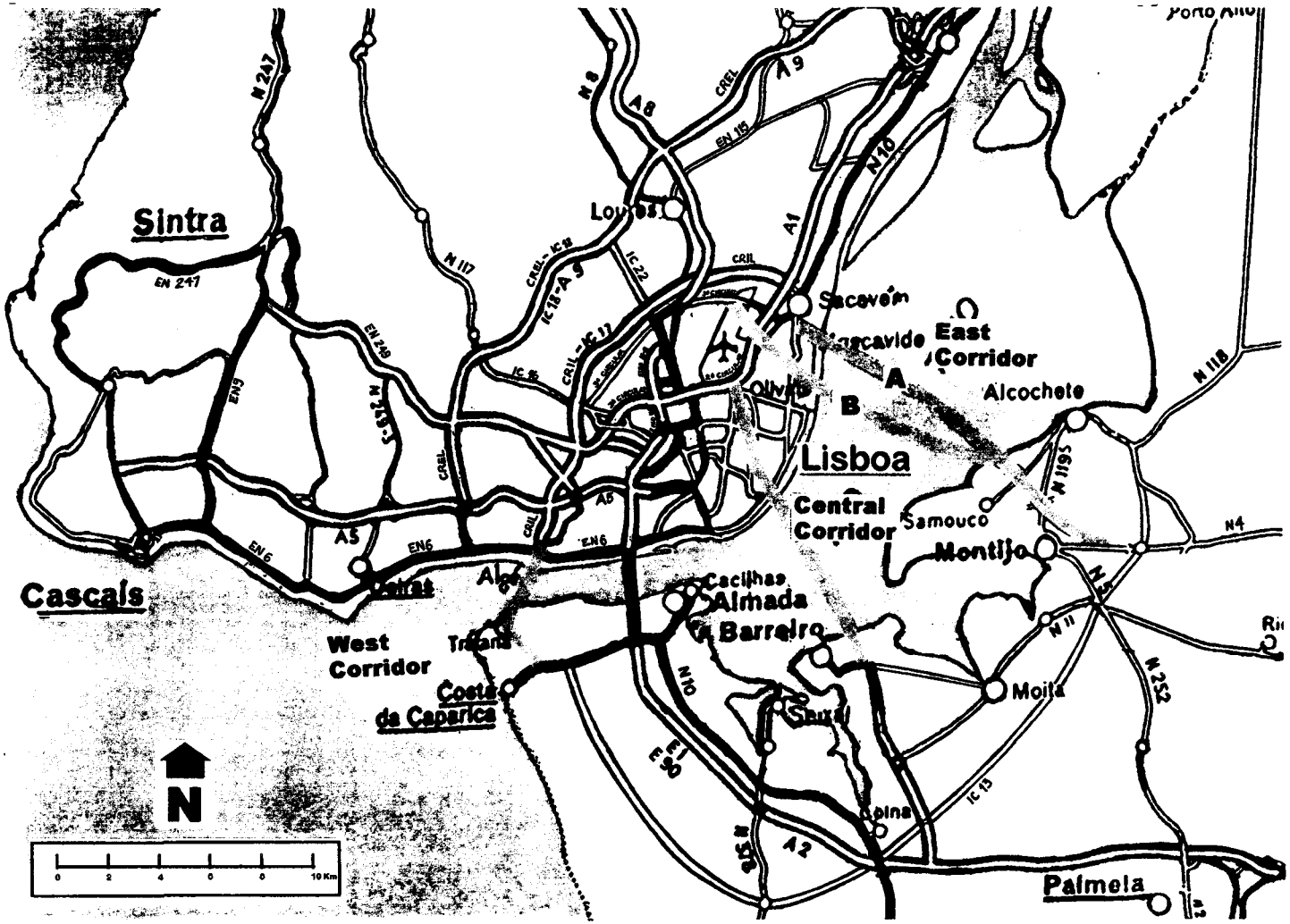
Source: Adapted from GATTEL (1991) and Michelin® (1995).

Figure IV.16 - Location of crossing alternatives A and B in the East corridor.



Source: Adapted from GATTEL (1991) and Michelin® (1995).

Figure IV.16 - Location of crossing alternatives A and B in the East corridor.



Source: Adapted from GATTEL (1991) and Michelin® (1995).

Figure IV.17 - Location of all crossing alternatives

Location decision

Following the presentation of the GATTEL recommendations concerning the crossing location, the Minister of Public Works, Transports and Communications decided[101] to pursue the studies for a road crossing in the *Montijo* corridor (between *Olivais* and *Montijo* - alternative B).

This decision faced the opposition of several entities. These included the Commissioner for Expo 98, who realized that one of the bridge pillars was going to be in the waterfront of the area, and the Junta of the Metropolitan Area of Lisbon[102] which had a strong preference for alternative A if the decision was the *Montijo* corridor.

The GATTEL document considered[103] alternative A in the *Montijo* corridor to have a greater construction complexity because it had to overcome two navigation channels *(Cala das Barcas* and *Cala do Norte),* while alternative B had only to overcome the *Cala do Norte.* In a meeting that involved the Lisbon Port and the navigation authorities, in the presence of the Minister of the Sea, it was agreed that the *Cala do Norte* was the major navigation channel with the *Cala das Barcas* being of restricted navigation importance associated to its crossing the Natural Reserve of the Tagus Estuary. Knowing this, it was possible to redesign the bridge to lower the construction complexity of alternative A. In this way the construction complexity of alternative A became similar to alternative B[104].

Following these discussions, the Minister of Public Works shifted his former decision[105] to the *Montijo* corridor alternative A (*Sacavém* to *Montijo-Grilo*)[106], adopting a solution that, curiously, had been completely left out of the recommendations of the GATTEL Steering Committee in Document 6. In fact, the last section of this document is called recommendation and no mention is made to alternative A in this part. The comparison in this final part of the document is only made between the *Barreiro* corridor and the alternative B of the *Montijo* corridor. This decision to choose alternative A was afterwards supported by a formal resolution of the Council of Ministers[107].

The choice of the *Montijo* corridor for the crossing was challenged by several ministers (including the Minister of Environment and the Minister of Planning) and other politicians, the environmentalist associations, and wide sectors of the professional community at large.

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[101] Dispatch 108/91, September 26, 1991, Minister of Public Works, Transports and Communications.
[102] representing the municipalities of the metropolitan area.
[103] *Memorando Síntese: Trabalhos Desenvolvidos, Nova travessia rodoviária sobre o Tejo na região de Lisboa,* GATTEL, Document 13, p. 15, July 1993.
[104] *Memorando Síntese: Trabalhos Desenvolvidos, Nova travessia rodoviária sobre o Tejo na região de Lisboa,* GATTEL, Document 13, pp. 15-16, July 1993.
[105] *Montijo* corridor alternative B (*Olivais* to *Montijo-Grilo*).
[106] Dispatch 39-XII/92, April 24, 1992, Minister of Public Works, Transports and Communications.
[107] Decree-Law 220/92, October 15, 1992.

Misunderstandings on the methodology

The GATTEL Planning Team defined a methodology of corridor evaluation and selection prior to a detailed study of specific crossings in the chosen corridor(s). Only afterwards would these alternatives be analyzed, using additional information on their insertion in the urban system and the transportation network. What this means is that instead of comparing alternatives since the very beginning, the first analysis was done using the corridors. Then, after selecting the preferred corridors the alternatives within those corridors were considered, including their insertion in the urban and transportation system.

The issuing of Document 6, containing the recommendations of the Steering Committee, shortens the phase of design and comparison among possible bridge crossings, mixing it with the corridors selection and generating a substantial confusion between the choices of crossing alternatives and corridors. Part of the conflict that developed afterwards may be related to this jump over the initially approved methodology.

For the technical community working closely with the GATTEL, the difficulties in understanding the reason for the choice were partially identified with the lack of a multicriteria analysis of the several options. No multicriteria analysis is shown in any of the available GATTEL documents, leaving room for a substantial ambiguity. Some professionals perceived the situation as an attempt from the government to avoid carrying on further technical analyses regarding the evaluation of the crossing alternatives. In the words of one of the specialists interviewed, "the development of alternatives was not based in any analysis, being therefore impossible to technically support any comparison among them."

At the time of the creation of the GATTEL, the process was set up by the government to achieve technical consensus. At the time of the decision, it is not clear how much attention was given to the technical advice developed by the GATTEL Planning Team. The technical reports produced by the GATTEL revealed a preference for the *Barreiro* corridor, contradicted in the last chapter of the GATTEL Document 6 with the Final Recommendations signed by the Steering Committee. In fact, in the document final section, the central corridor and the *Montijo*-B crossing are considered at the same level, being only differentiated by the objective in mind — land use versus national North-South connection. Curiously, no reference appears in the recommendations to the congestion issue in the existing bridge which seems to have triggered the whole process.

STAKEHOLDERS: INTERESTS AND ROLES

The issue of the location of the new bridge over the Tagus river caught the interest of a substantial number of individuals and groups including residents, professionals, politicians. In this section, the various actors involved in the process, their interests and roles are described.

Some of these players participated since the beginning of the process during the studies being developed to decide on the location of the new bridge, but several of them got involved or more strongly involved after the Ministerial decision because they opposed the choice made.

Government and central administration

The ministries most directly involved in the process were those of Public Works Transports and Communications (MOPTC), Finances (MF), Planning (MPAT) and Environment (MARN), all represented in the GATTEL Steering Committee, where the representative of the Ministry of Public Works Transports and Communications has the presidency. Each one of the representatives assured the coordination with the respective ministry.

When the Minister of Public Works, Transports and Communications ordered the GATTEL to pursue the studies for the a road crossing in the *Montijo* corridor (between *Olivais* and *Montijo* - alternative B), among the alternatives that had been proposed and analyzed by the GATTEL Planning Team, the ministries of Planning and of Environment showed preference for the *Barreiro* crossing.

The Ministry of Public Works, Transports and Communications argued for the *Montijo* crossing on the basis of its presumed merits for assuring the national North-South connection. The Ministry of Planning considered the *Barreiro* crossing as an excellent device to rehabilitate two declining areas *(Barreiro* and *Chelas)* and to avoid opening new fronts of development. The Ministry of Environment had a similar stand , further defending that the front of development following the *Montijo* crossing would be too close to a natural area of high environmental value, and therefore a threat to ecological sensitive areas.

The Ministry of Planning went on to develop a document justifying the position kept until the resolution of the Council of Ministers deciding on the bridge location.

The position of the Ministry of the Environment was more ambiguous and suffered adjustments along the process. At a certain point, this Ministry shied away from the debate, a development that was interpreted by the environmental associations and some other actors as an attempt to avoid taking a clear stand on the issue.

Ministries participated in meetings or authorized the circulation of information necessary for the study. Several Ministries not represented in the GATTEL Steering Committee also participated in meetings getting involved along the process. Among them were the ministries of Internal Affairs[108], of the Sea[109] and of Industry[110]. Of these, the most definitive stand was

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108 MAI - *Ministério da Administração Interna,* Ministry of Interna Affairs.
109 MM - *Ministério do Mar,* Ministry of the Sea.
110 MI - *Ministério da Indústria,* Ministry of Industry.

taken by the Ministry of Industry, in defense of the *Barreiro* option became the opportunity for recovering a declining industrial area in the Southern bank. The Ministry of Internal Affairs assumed a role of mediator in the debate leading to the final decision on the location, just before the Council of Ministers, promoting several meetings among the involved Ministers and attempting to achieve consensus.

The final decision on the location of the new bridge was taken in the Council of Ministers of July 30, 1992. The *Montijo* corridor (between *Sacavém* and *Samouco* - alternative A) was approved with the opposition of the Ministers of Planning and of Industry. The Minister of Environment was absent, being represented by his Secretary of State.

In general, although opinions of the Ministers appeared in the media at several stages during the process, their role grew in importance at the last phase of the decision as their voting contribution in the Council of Ministers was approaching.

Regional administration

The Coordination Commission of the Lisbon and Tagus Valley Region (CCRLVT), directly dependent of the Ministry of Planning, also played a role. This commission is responsible for supervising the regional development and was preparing the Land Use Plan for the Metropolitan Area of Lisbon (PROTAML) while the studies for the new Tagus bridge location were being done. The team working for the Commission on this plan got substantially involved in the process and participated in several meetings with the GATTEL.

The studies for developing the PROTAML were important for the work being developed by the GATTEL. As one of the interviewees put it, "besides the information it provided, the PROTAML proposed the land use model for the metropolitan area of Lisbon, essential to provide the framework for the corridors and to articulate them with the model." As the PROTAML was being developed for the Coordination Commission of the Lisbon and Tagus Valley Region, directly dependent of the Ministry of Planning, it was one of the supporting elements for the position of this Ministry regarding the new bridge location.

Initiated in May 1989, accomplished in December 1992 and revised at a request of the government in mid 1993, the PROTAML is not approved by the central government yet. One of the national newspapers reported on the controversy regarding the plan approval referring to the words of a Secretary of State of the Ministry of Planning[111]:

> In the opinion of that member of government the first version of the PROTAML "did not address with the necessary accuracy" and "it did not safeguard duly" two essential aspects for the Metropolitan Area of Lisbon: the areas surrounding the *Montijo* bridge and the preservation of the woodlands of the *Albufeira* lagoon." "I am not relaxed with the rules imposed for the area of the bridge and I would like to do everything possible to avoid what happened to the areas surrounding the 25th of April Bridge, in urban quality, population life conditions and landscape degradation (PÚBLICO, March 16, 1995).

[111] Dr. António Pereira Reis.

The coordinator of the PROTAML[112], contacted by the newspaper, showed surprise for these comments, stating that such concerns were never mentioned in the meetings he had with the Coordination Commission of the Lisbon and Tagus Valley Region (PÚBLICO, March 16, 1995).

At a certain point in the process, a restructuring of the public administration gave the responsibility of the natural resources management in the region, formerly belonging to the Coordination Commission of the Lisbon and Tagus Valley Region, to a new entity: the Regional Administration for the Environment and Natural Resources[113], dependent of the Ministry of the Environment.

Office for the Tagus River Crossing in Lisbon (GATTEL)

The GATTEL was created in January 1991, in the context of the Ministry of Public Works. Its mission included "executing, coordinating and controlling the activities needed to promote the construction and exploration of a second road crossing of the Tagus in the Lisbon Region." It was also given the roles of assuring the cooperation of services and entities involved in the studies and the construction, and of representing the government in all sessions related with the studies and the execution of the work.

Aware of the complexity of the issue at hand, and the implications for areas such as land use and the environment, the GATTEL Steering Committee decided to form a Planning Team for developing the needed studies to "present a proposal of the location of the crossing, including the access network in both banks, in the context of the national and international, road and train connections, of the land use, the environmental protection...."

Environmental associations

The main environmental associations involved were the League for Nature Protection[114], the *Quercus,* and the Land Use and Environment Study Group[115]. In a later phase other environmental organizations participated occasionally in the process, such as the D. Dinis Institute[116].

In an early stage of the planning process, the GATTEL requested to professionals of the League for Nature Protection (LPN) a study identifying ecologically sensitive areas. In this way, LPN found out that the location of a future bridge over the Tagus estuary was under consideration. Concerned with the preservation of the natural areas in the region, LPN alerted

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[112] Professor Jorge Gaspar.
[113] *Direcção Regional do Ambiente e Recursos Naturais,* Regional Administration for the Environment and Natural Resources.
[114] LPN - *Liga para a Protecção da Natureza,* League for Nature Protection.
[115] GEOTA - *Grupo de Estudos de Ordenamento do Território e Ambiente,* Land Use and Environment Study Group.
[116] IDD - *Instituto D. Dinis,* D. Dinis Institute.

other environmental associations to the problem. However, they only became clearly committed to the issue after a complaint submitted by the LPN to the Portuguese Supreme Administrative Court in November 1991[117], though more concrete actions were only carried out after February 1992. A joint press conference on the issue was given by these Associations in March 24, 1992. This was the public starting point of a joint action of the environmental associations against the construction of the new bridge in the *Montijo* corridor. This action lasted up to the present day. The bridge is seen by one of our Administrative Public Officials as "the issue that brought together the environmental associations", marking a turning point in public participation in Portugal and triggering a new phase in the environmental NGOs strategy.

The environmentalists were particularly concerned with the possibility of location of the new bridge in the *Montijo* corridor, since the anchorage point in the Southern bank would be in an area of high environmental quality, creating over it additional development pressures.

Struggling with scarce resources, the environmental associations joined efforts to identify a common strategy as a way to increase efficiency of intervention. Several actions were taken jointly by the environmentally concerned groups mentioned: they formed a common team, with two representatives of each group, responsible for keeping track of the evolution of the process and for collecting and processing information to substantiate their positions. The activity of this joint team concentrated on specific goals:

(1) Information diffusion to raise the public awareness - giving press conferences and producing a considerable amount of opinion articles/papers in the media;

(2) Contacts development - scheduling meetings with key politicians, to clarify positions and to inform them of their concerns;

(3) Collection and processing of information - through the interpretation of data and the development of studies to support their arguments technically;

(4) Street actions - aiming at public mobilization, such as the distribution of a publication in the areas used by North-South commuters, a press conference in the existing bridge and the distribution of flyers;

(5) Court actions - initiated with the complaint against the government submitted to the Portuguese Administrative Court by the LPN, intending to force the political setting to comply with the new environmental rules.

From the environmental point of view all the corridors have negative impacts. Therefore the ecologists aimed at supporting a location with smaller negative effects on the environment and with greater potential to solve congestion, considering that this favors a large number of people.

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117 Complaint P 4008/92 (Nov 28, 91) .

Professional community

Experts were involved in the studies and projects regarding to planning, transportation, infrastructures and other areas. Planners, particularly those involved in the development of plans for the area, assumed an important role, due to the extensive planning activity taking place for the region.

It is important to understand that professionals began debating issues related to the metropolitan area long before the problem of a second road crossing over the Tagus river was put to them. The first comprehensive views for parts of the region appeared in 1987, in association with the preparation of the Integrated Operation of Development (OID) of the Peninsula of *Setúbal.*

After the entrance of Portugal to the EU/EEC in 1986, the classification of the Peninsula of *Setúbal* as a deprived area made this peninsula which contains the Southern municipalities of the metropolitan area of Lisbon eligible for special development funds. The municipalities in the area got together and developed a joint plan, the *Distrito* of *Setúbal* Development Plan (PIDDS), to stand as a basis for fund allocation.

Though restricted to the Southern municipalities of the AML, the PIDDS was the first plan of development targeted specifically to this region and putting together several interrelated issues. Other more sectorial plans, mainly in the area of transportation, were developed before and during this process and they became an important source of information for studies, plans and projects developed afterwards, though their proposals were, in the opinion of several professionals, frequently forgotten or still to be implemented. Among these plans[118] are the Lisbon Region Transport Infrastructure (ITRL) (1980's), the Lisbon Region Transportation Study (ETRL) (1970's), the National Road Plan (1985/86), the Plan for Modernization of Train Services (1988/94), the Lisbon Train Interchange Office (GNFL) (1987).

On the other hand, at the beginning of the development of the Regional Land Use Plan for the Metropolitan Area of Lisbon (PROTAML), the municipalities of the Metropolitan Area got together for the first time and, under the encouragement of two of their mayors, technicians and politicians working at the local level initiated a period of debate and reflection on the future of the region. These actions produced a few written documents summarizing the views and expectations of technical professionals for the region. One of the more immediate results was the creation of the Metropolitan Area of Lisbon Board and the growing feeling of identity of the region among the professional community and probably the region politicians as well. Informal networks were established and the role of the municipalities began to be seen by local politicians and practitioners in a wider regional context. It is the understanding and networking

[118] A more detailed description appears in this chapter in a preceding section entitled "INTENSIVE RECENT PLANNING ACTIVITY IN THE AML", under the heading "Transportation plans".

that were developed by professionals in the course of these activities that will influence their stands on the new bridge location issue.

Most of the professionals that expressed more energetically their position regarding the bridge location had, in one way or another, participated in the planning activities under sway for the area. Particularly involved in the development of plans for the region, planners were mainly concerned with the effects of such an important infrastructure in generating development and therefore reshaping the region land use. Information on aspects such as population and employment patterns and recent trends affected the way they understood the region and led to a reformulation of the dominant concept of intervention, shifting it from an expansionist approach to one of improving what is already in place.

The technical community got rather involved in the new Tagus crossing issue, particularly by participating in debates: some conducted and organized by research institutes or political parties, others in the media, particularly in the television. One of the first debates that had a substantial influence in questioning transportation policies took place in Lisbon in 1990, shortly after the new Minister of Public Works Transports and Communications was invested[119].The publication that came out of this meeting, though ambiguous in its statements, contains interventions questioning the role of the Public Works and Transportation Superior Council as the dominant entity advising the Minister on infrastructure decisions. This opinion is based on the observation that this board is often consulted without being previously supplied it with sufficient technical studies and information on which the recommendations can be soundly based.

These debates were retaken when divergent views emerged about the three alternatives for the new crossing of the Tagus in the Lisbon region made public in 1991. Among these debates one was organized in the Civil Engineering National Laboratory (LNEC) in April 14, 1992, by several professional associations (architects[120], engineers[121], urbanists[122] and water resources professionals[123]). This debate resulted in a joint communication prepared by the Portuguese Association of Environmental Engineers (APEA) and the Research and Intervention Urban Nuclei (URBE).

Throughout the decision process regarding the new Tagus crossing several relevant key experts expressed their views on the issue, frequently challenging the chosen option, on the grounds of construction factors, environmental impacts or land use development.

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119 Organized by the Portuguese Association of Train Transportation in April 5, 1990, for discussing a possible train crossing in the existing bridge, it involved close to 1000 participants, mostly transportation professionals.

120 AAP - Associação the Arquitectos Portugueses, *Portuguese Architects Association;* APAP - Associação Portuguesa de Arquitectos Paisagistas, *Landscape Architects Portuguese Association.*

121 APEA - Associação Portuguesa de Engenheiros do Ambiente, *Environmental Engineers Portuguese Association.*

122 URBE - *Núcleos Urbanos de Pesquisa e Intervenção,* Research and Intervention Urban Nuclei.

123 APRH - *Associação Portuguesa de Recursos Hídricos* - Association of Water Resources.

Municipalities

All the municipalities of the Metropolitan Area of Lisbon became involved. The ones more directly concerned with the decision of the location of the crossing were Lisbon, *Alcochete, Almada, Barreiro, Loures, Moita, Montijo.*

There was not a stable pattern of positions of the municipalities regarding the location of the new bridge, either because politicians or technicians working for the same municipality expressed distinct views on this issue or because they changed opinions along the process. Some aligned since the very begin with the *Montijo* option and stuck to it. Others initially defended *Montijo* but shifted afterwards, when the *Barreiro* corridor appeared and they saw more potential in it. Still others had some persons working for the municipality preferring one option while others selected another; There was no municipal consensus.

Alcochete and *Montijo* defended since the very beginning the option of the *Montijo* corridor, historically discussed and never accomplished. With the construction of the 25th of April Bridge, the North-South traffic had been shifted away from *Montijo* which had been historically the main boat crossing location in the Southern bank with Lisbon. This municipality was eager to recover its position of relative importance within the metropolitan area, as confessed by one of the interviewees who stated that if the new bridge would not be in the *Montijo* corridor both *Montijo* and *Alcochete* would be permanently thrown to the periphery of the metropolitan area. These two municipalities see the construction of the new bridge in the *Montijo* corridor as the long lost opportunity of development of its territory. The Mayor of *Montijo* even stated that the one century old dream was becoming a reality.

The *Barreiro, Seixal* and *Almada* municipalities favored the central corridor, as they were aware of its contribution to the relief of commuting congestion in the existing bridge and wanted to provide greater accessibility to the capital for their residents depending on the job market in the other bank. Moreover, *Barreiro,* now a declining area, sees in the central corridor a way to restructure economically its space.

The Lisbon municipality assumed for a long period several different positions depending on the person making the statements. At the beginning, a strong position in favor of the central corridor was assumed, though towards the end the preference officially expressed was for the East corridor[124], as stated by the Director of the Department of Strategic Planning during a public debate with the presence of the President of Portugal.

At a later stage in the decision process concerning the bridge location, the AML municipalities got together to claim their opposition against the option *Sacavém-Montijo* (option B of the *Montijo* corridor).

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[124] Public Debate with the President, March 7, 1994.

Metropolitan Area of Lisbon Board

The Metropolitan Area of Lisbon Board is a recently created body bringing together the municipalities of the Metropolitan Area of Lisbon. It is essentially a forum of debate for the mayors of the metropolitan area municipalities.

This entity got together to claim that the municipalities did not want the option *Sacavém-Montijo* (option B of the *Montijo* corridor) and, in case this corridor were to be chosen, they wanted option A.

Trains of Portugal Company (CP)

The CP is the firm responsible for the operation of the national train system. Its representatives attended the GATTEL meetings frequently. The CP had waited during a long time for a train crossing over the Tagus river in the region of Lisbon to complete the train connection North-South and raised frequently this concern during the discussions. however, it never built its position cautiously and forcefully in favor of a new road and train crossing. Maybe it saw for so many times its hopes being dismissed without accomplishment, that the possibility of having a connection through the existing bridge, even if not in the most appropriate conditions, might have had some influence in this behavior by deciding to hold to this possibility in order not to risk losing it all.

National Highway Authority (JAE)

The JAE is the entity responsible for planning and managing the national road system. It was responsible for the operation and exploration of the 25th of April Bridge.

Air Force

The Portuguese Air Force participated in connection with the *Montijo* Air Base.

For a while, when the different location alternatives were being discussed, the GATTEL Planning Team, at the request of the Air Force, found out that the *Montijo* air base was a hard constraint, meaning that no option could anchor at the peninsula where it is located. Professionals working in the GATTEL study confirmed that the Minister of Public Works confirmed this. It was never clearly stated what was going to be the future of the base although on the basis of rumors that circulated, the military were going to abandon it. It might be that the land of the base was already assigned to other functions.

Lisbon Port Authority (APL)

The APL was involved due to the possible interference between the future bridge and boat navigation in the Tagus estuary and to the needs of providing a connection of the work developed with future plans for the Lisbon sea port.

The importance of this entity is clearly stated in the legislation that creates the GATTEL, there it is stated that the studies should take into account the problems of "drainage and navigability of the Tagus."

Particularly interested in the expansion of its activities towards the South bank, and the recovering of the North bank sea port areas deactivated to new uses of what the Waterfront Land Use Plan (POZOR)[125] is an example, the APL leaned essentially to the West corridor which was abandoned at early stages of the process.

The APL was also responsible for defining how high the bridge should be constructed above the river level, in order to allow for the circulation of the boats, and what should be the minimum distance between the bridge pillars.

Expo98

The managing entity of Expo98, the international exhibition scheduled to take place in 1998 in Lisbon, got involved because the exhibition is to be served by the new bridge and its location is subjected to the bridge impacts.

The Expo98 representatives developed pressure over the GATTEL and the entities responsible for the decision to abandon the *Montijo* alternative B. Though they have not clearly stated their preferences, they came against the *Montijo* alternative B as soon as they understood that one of the pillars supporting the bridge was going to fall on the waterfront of the Expo98 site. They seemed to aggree with the *Montijo* corridor, as it appeared to facilitate the connection of the Expo98 to Spain, one of the essential accesses for the success of the event.

Natural Reserve of the Tagus Estuary (RNET)

The entity responsible for the management of the Natural Reserve of the Tagus, presently within the National Conservation Institute (ICN)[126] which was formerly called National Park Service[127], was involved due to the impacts of the bridge construction and operation in this important natural reserve.

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[125] POZOR - *Plano de Ordenamento da Zona Ribeirinha,* Waterfront Land Use Plan.
[126] ICN - *Instituto da Conservação da Natureza.*
[127] SNPRCN - *Serviço Natural de Parques, Reservas e Conservação da Natureza,* National Park Service.

The positions of persons associated with the Natural Reserve of the Tagus were discreet due to its role within the Portuguese administration. However, several interviews with the technicians of the Natural Reserve brought to the media environmental concerns and called attention to the natural values threatened by possible locations of the new bridge.

One of the interviewees said "the government has strong discipline"[128]..."there is no individual space for maneuver"[129]. This lack of individual space for maneuver associated with discipline enforcement reflects a highly centralized bureaucratic administration and may have substantially influenced the ambiguity in the position of most actors of the public administration.

Montijo and *Alcochete* Association for Defense of the Quality of Life[130] (AMA)

The AMA is an organization created to defend the interests of *Alcochete* and *Montijo* residents in the construction of the new bridge across the Tagus. Set up initially to stand for the bridge in the *Montijo* corridor, this association soon widened its role to intervene in other areas related to the quality of life and the environment.

As stated by one of the members of the association, the location of the bridge in *Montijo* was brought up since the beginning of the century and revived in the fifties and the sixties, gathering a substantial number of followers. This debate, that developed while deciding the location of the existing bridge, was carried out at the central administration level without any intervention from the municipalities. "Once the existing bridge was constructed, the discussion was exhausted" until the traffic growth achieved the carrying capacity and "did not provide satisfaction to mobility."

According to one of the municipal officials interviewed, "already in the eighties, the municipalities of the Peninsula of *Setúbal* felt lack of accessibility" and a certain "isolation, namely *Alcochete, Palmela, Montijo."* Following studies integrated in the *Distrito* of *Setúbal* Development Plan (PIDDS), it is concluded that "a second bridge over the Tagus absolutely necessary", as issues related "to employment and the productive system depend on the improvement of the accessibility to Lisbon." The same interviewed also stated that "it is the PIDDS work, politically reflected and conducted in an integrated perspective, that gives the grounds for the development of mechanisms that in 1989-90 gave the first steps for the study on the location and funding of the new bridge."

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128 *"o Governo é muito disciplinado".*

129 *"não há espaço de manobra".*

130 AMA - *Associação de Montijo e Alcochete para a Defesa da Qualidade ded Vida,* Montijo and Alcochete Association for Defense of the Quality of Life.

25th of April Bridge Users Association

The 25th of April Bridge Users Association emerged out of the protest movement in the 25th of April Bridge in July 1994. It resulted from merging two user associations that appeared simultaneously and independently, one in the Southern bank and the other in the Northern bank of the Tagus.

For years the Southern populations felt neglected and considered it unfair to have to pay for for a bridge that had already been paid for[131] and which is responsible for long hours of traffic lines everyday. As one of the interviewees put it "there was a perception that asking for increasing tollfares in the existing bridge was an indignity, considering that it was already paid." The legislation supporting the increase of the bridge toll was enacted in June 3, 1994[132], just before the European Parliament Elections. Considering this a wrong timing, the Prime Minister postponed its enforcement for the period after the elections. The feeling of injustice grew with the publication of the legal document establishing a 50% increase and the public discontent grows in the following 20 days.

The announcement of the increase of the bridge toll, without further explanation, the substantial increase enforced, the uncertain connections with the polemic bridge to be constructed in the *Montijo* corridor together with the possibility of associated future toll increases, the perception that the other bridge would not serve the present users of the 25th of April Bridge due to the huge distance between them generated the "biggest spontaneous and continuous popular protest in memory in Portugal"[133].

The media assumed an important role in providing public information. Two weeks before the crucial day the radios informed the public about the toll increase. The attempt to raise the cost was postponed till after the European elections. The public began expressing themselves through a noisy "honking"[134] which lasted for a week without the government having showed any sign of noticing it. The toll increase was limited and the protests went on through generalized continuous "honking" and toll payment with large bills and small coins that aggravated the already long congestion lines. Still no signs from the government. This lack of sensibility or failure to assess the extent of discontent, provided the grounds for more radical actions from the indignant commuters.

Economically, the most affected were the truck drivers that had to commute several times a day, who were going to be in the first line of the protests. Crossing the bridge ten to twelve times a day, carrying construction materials for a large number of public works, they felt particularly hurt by the toll increase. Realizing that the 50% increase was going to overburden

131 the 25th of April bridge was paid in 1987.
132 *Portaria* 351/94, June 3.
133 Visão, Jun 27, 94.
134 *"buzinão"*.

them to an unbearable limit, they decided to take in their own hands the protesting. In June 24, 1994, they blocked the South entrance to the 25th of April Bridge, leaving only a lane for emergency vehicles. What is most interesting is the acceptance of this situation by the other drivers entering town for their work day who promptly (with rare exceptions) accepted the inconvenient situation. Once more, the government did not seem to interpret this as a generalized discontent that could get out of hand.

In the meantime all the national television and several radio stations were broadcasting the events. With the Prime Minister away in Corfu and unable to handle the situation, the government chose to follow an authoritarian role, with no openness to negotiation.

Positions radicalized, the police intervened and by the end of the day the antagonism had reached open confrontation and the country assisted astonished to a situation considered of the times previous to the 25th of April revolution. The local population, with a long tradition in the workers fights and profiting from a local holiday[135], offered its solidarity, revolted against the exercise of authority which brought up the old "traumas and wounds of the Southern bank."

At the end of the day two associations emerged out of the events: the Association of the Users of the 25th of April Bridge in *Pragal (Almada)* and the Pro-Association of the Users of the 25th of April Bridge in Lisbon. In a joint meeting, after realizing that they had the same objectives, they decided to merge in one structure: the 25th of April Bridge Users Association[136].

Assuming no position in relation to the location of the future bridge, their Association defined as its main goal the abolition of the toll fare by the cancellation of the legislation supporting the toll increase.

Residents

The residents more directly affected by the new crossing were mostly from the municipalities of *Alcochete, Almada, Barreiro, Lisbon, Loures, Moita, Montijo, Seixal* and*Vila Franca de Xira.*

Lisbon Train Interchange Office (GNFL)

The GNFL is a committee created to supervise the train crossing to be installed in the 25th of April Bridge and to study a future train crossing over the Tagus river.

TRANSTEJO

TRANSTEJO is the Tagus boat crossing operator.

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135 holiday in the municipality of Almada

136 *Associação de Utentes da Ponte 25 de Abril* - 25 th of April Bridge Users Association.

Airports and Air Traffic Company[137] (ANA)

ANA is the public firm responsible for airports and air traffic in Portugal. It has the responsibility for studies on the location of the future Lisbon airport. Locations North and South of the Tagus have been considered for many years, but a definite decision on the future airport location is not available yet.

Lisbon Subway[138]

The public firm responsible for the design, management and operation of the Lisbon subway system presently operates a network restricted to the Lisbon municipality. The location of future bridges over the Tagus are a subject of its main concerns and may be related to a future extension of the subway system to the Southern municipalities.

Consortiums for the new bridge construction

Several firms formed consortiums for the construction and operation of the new bridge. These consortiums are multinational and have high stakes in the project.

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[137] ANA - *Aeroportos e Navegação Aérea,* Airports and Air Traffic Company.
[138] *Metropolitano de Lisboa,* Lisbon Subway.

PART 2

VIEWS OF PROFESSIONALS, POLITICIANS AND MEMBERS OF INTEREST GROUPS

This Part shows how politicians, professionals and interest organizations activists saw the issues being raised by the discussion over the location of the new crossing over the Tagus. Quotes were drawn out of people's comments, media, and projects, plans and studies. It is obvious from the richness of comments that information (ideas, facts, statements, views) all played a part in the process of shaping people's opinions and positions.

Attention of professionals concerned with the location of the bridge shifted from congestion to the structuring of the metropolitan area, forcing the confrontation of two models of development: one that had lasted for long defending new poles of development for the decentralization of the capital, and a new one calling for the "resewing of the urban tissue" by directing growth to the already infrastructured open urban spaces and avoiding to create new fronts of development.

The case of the decision on the location of the new crossing over the Tagus estuary is a paradigmatic situation of the problem of inadequacy of public decision processes in a society shifting from a representative to a participative democracy. This is recognized by one of our politicians with international reputation during the interview:

> "This process was an excellent exposure of the inadequacy of a decision process of a representative democracy, where the elected body in practice conducts the strings of power and makes major decisions on land use or resource management that affect the daily life of people during a long period of time"

The same politician goes on:

> "Not very different from so many other public decision processes ... it became more polemic due to the magnitude of the potential impacts generated".

The political power, unwilling or unable to adjust quickly to the needed changes, operated in the same way of 'business as usual' and felt unjustly suffering the required painful test of public exposure as something to go through and not as a process leading to the readjustment to the public interests.

> "There was a similar attitude" (referring to previous public processes) "from the part of the political power, of 'suffering' the process of public debate, but basically not changing opinion"

This case of the decision on the location of a new crossing over the Tagus estuary came out to represent the merging of the very many issues interacting within recent public decisions in Portugal. Rich in exposing failures and revealing in ways to cope with the changing society, it is an important source of research on complex environments. Its impact on the life of the AML residents and the amount of information that circulated as basis of argumentation for different positions during an extended time period contributed substantially to its peculiarity and richness for study.

The insistence of the professional community in seeing the location choice as exclusively a technical problem forced the several actors to look for data to support their positions. The information collected in this way was important but was not enough to explain the case at stake and to favor consensus.

What was at stake was a processual issue of involvement and legitimacy. Involvement, because many people felt excluded and unable to intervene in an issue they considered as part of their lives as AML residents. Legitimacy, since the local constituency questioned the legitimacy of the decision making political setting.

Several actors felt a need to get involved when the option was not consensual, but they did not find adequate mechanisms to participate. Most of the meetings promoted by several institutions played a role of forums, but were scattered and had a limited effect in the arenas where decisions were taken. These operated separately, leaving most of the players, if not the totality, out.

The central player in this process was the GATTEL, the entity created by the government to develop the studies leading to the decision of a second crossing in the Lisbon region. Within this entity it was the GATTEL Planning Team that was responsible for the technical advice on the location. This multidisciplinary group brought innovation to the process, as a consequence of assembling a substantial amount of expertise, adopting interactive modes of work and following a private sector way of operation under tight due dates.

Besides GATTEL, a group of players with greater involvement in the process were the Environmental Associations. These NGOs, engaged since early stages, kept a permanent role along this public decision and intervened actively throughout the process. This effort was for

these associations a learning process, in organizational and interactive terms. They generated and forced the Public administration to make available greater amounts of data. While doing this they revised their operation procedures.

A large part of this research focuses on these two groups: the GATTEL and the Environmental Associations. The stories of these two actors are particularly rich in what concerns to the of use of information and in the establishing of interactive processes. The emerging of two new interest associations as a result of the development of the case is also discussed.

Given the complexity of the process being studied and the large variety of intervenients involved in different moments of this public process, the other actors were mostly individuals involved in plans or projects for the area (past or present), members of interest associations, municipal officials (either professionals or politicians) and some key public figures.

The following text tells the story of the public decision of the second crossing of the Tagus in Lisbon. It reflects the interpretation of the facts, constructed mostly through the views expressed by the interviewees. The historical background was built from several plans, projects or documents produced for this region. Meeting memos and technical statements were used when it became necessary to validate facts. News were also helpful, because since this is still an on going process there is not much published material available except for the media.

ONE CENTURY OLD HISTORY

The history of the crossings on the Tagus estuary is a one century long lasting sequence of events as stated by some of the interviewees:

> "The crossing in *Montijo* is an old story and came out again when the discussion of a new alternative crossing was raised again." (Environmental NGO member)

> "The discussion over the construction of the new bridge goes as far as the construction of the 25th of April Bridge. Already at that time several hypotheses of crossing were discussed. These discussions came up in the Proceedings of the Corporative Assembly[139], and were held in the Corporative Chamber. They already thought that the bridge should be constructed in *Montijo* and not in *Almada* for the same reasons (e.g. the connection with Spain). They ended up with the location of the existing bridge due to it being the narrower crossing and therefore much less expensive." (municipal official in favor of the *Montijo* crossing / NGO member)

The story of the bridge location may be seen as the mixing and overlapping of several short stories, some of which dating from one century ago. It was built on several events happening each time the government, some specialist or agency thought it was time to construct a crossing to the South in the Lisbon region. Raised and abandoned several times due to numerous

[139] *Assembleia Corporativa,* Corporative Assembly.

factors, the issue of a crossing challenged the creativity of the specialists bringing up proposals that shaped the minds of the professionals working in the area. But the story of the crossing in the Tagus estuary meant more than just plans or projects. It was a story of aspirations of the region residents, of evolution of urban and regional options, of gained and lost opportunities and of continuous concern. In sum, it was the story of a changing society and of its adaptation to changing patterns.

For more than 100 years, discussions over possible locations of crossing of the Tagus estuary took place, bringing along studies and proposals developed by several specialists, focusing within two main channels: *Montijo* and *Almada*, the shortest pathways to the Southern bank.

Once in a while, the need for a crossing was brought up and given the utmost importance to die afterwards due to a variety of circumstances, the most important being the lack of financial resources for such a substancial endeavor. These episodes left behind a legacy of projects and proposals developed along the years to overcome the estuary barrier. Professionals working in the metropolitan area reported to be familiar with some of these proposals.

STICKING TO TWO PATHWAYS

Several connections emerged maintaining the same corridors — *Almada* and *Montijo*. Technological constraints forced specialists to pursue the shortest path. These pathways privileged the proposals emerging until the middle of this century, influencing future generations of specialists and framing their minds. One of the interviewees stated:

> "These things made lots of people in the 50s and the 60s to defend that the bridge should be here *(Montijo)*. During this period the municipalities were not involved in the process and the debates were processed all within the central administration." (municipal official in favor of the *Montijo* crossing / NGO member)

Therefore, it is more than natural that the bustling around a possible future connection, linking the capital to the South, raised again the expectations of *Alcochete* and *Montijo* residents when the first opportunity for the construction of a bridge emerged in the middle of this century.

In 1966 the *Almada* corridor received the construction of the 25th of April Bridge, fulfilling the needed connection in the West of the estuary. The populations of *Montijo* and *Alcochete* saw this as an opportunity lost by them.

It is evident that the present technical community generally accepted the idea of a second crossing in *Montijo*. This was confirmed by the plans and projects proposals of crossings

existing for the area and restated by the interviewees. Those discussing a second crossing always assumed a connection in *Montijo*, considering the other pathway already implemented. Professionals considered *Montijo* the historical location and some used that as part of the argument to defend that location:

> "Very early, before the discussion was initiated, there were reports from the beginning of the century that defended the bridge in this area." (municipal official in favor of the *Montijo* crossing (NGO member)

> "By the end of last century, Eng. Miguel Pais had discussed the need for a crossing that came to be in *Beato-Montijo* in 1920. Public positions were held and a bridge for vehicles and train was spoken, connecting *Montijo* to *Olivais, Sacavém, Beato* (oriental connection). The municipalities that today belong to the metropolitan area of Lisbon wanted the crossing." (GATTEL member)

A municipal planner working in the metropolitan region states this view, actually shared by several of the interviewed specialists :

> "When the issue was raised once again by the government, eager to establish a second crossing due to the congestion in the existing bridge, the only possible other alternative was *Montijo.*"

In sum, *Montijo* became along the years the other possible connection, a fact taken for granted in the mind of most people. This strongly influenced the way professionals looked at the issue once it came out again.

That *Montijo* was the most considered connection is confirmed by several plans developed for the area. Among them are the Master Plan for Lisbon (1948)[140], which considers the new bridge connecting *Poço do Bispo* (Lisbon) with *Montijo*, linking to one of the circular throughways. The main roads proposed in the Plan of 1948 were reassumed in the 1959 Master Plan of Urbanization for Lisbon[141] with some modifications. Among the changes is a new location for the bridge over the Tagus, which is proposed to connect *Alcântara* to *Almada.* Moreover, a throughway connecting *Alcântara* through *Campolide* to *Buraca* and two highways, — one to the North and the other to the South, as a continuation of the bridge were also suggested (Silva, 1994).

The great increase of traffic verified in the fifties and the operation of the Tagus bridge in 1966, forced the Municipality of Lisbon to consider the revision of the 1959 Plan. A Commission was created for that purpose. It identified three main issues to be addressed: radiocentrism, deviation between the expected and real population, delays in certain infrastructures and collective equipment. This Plan — 1966/67 Master Plan of Urbanization for Lisbon — already includes studies developed by other entities, such as the Lisbon Train Interchange Office (GNFL) of Lisbon and the Lisbon Subway (*Metropolitano de Lisboa)*[142] (Silva, 1994).

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140 *Plano Director da Cidade de Lisboa - PDCL* - 1948, also called Groer Plan: This plan refers to a 3rd circular which would include the *Av. dos Estados Unidos da América,* partially constructed, connecting the forest park of *Monsanto* with the future bridge to be built in *Grilo.* This link was totally constructed until Av. *Gago Coutinho.* The Plan for *Chelas* adopted it, as well as the following Urban Plans (pp.192, *Carlos Nunes da Silva, Política Urbana em Lisboa, 1926-1974, Livros Horizonte, 1994*).

141 *Plano Director de Urbanização de Lisboa* - PDUL 1959.

142 The construction of the underground until *Alvalade* was underway at the time.

These Plans restrain the crossings to the two pathways, identify problems that last until our days[143] and included studies develop by other entities working in the area, encompassing development concerns that spill over the limits of the municipality.

THE FIRST TAGUS ESTUARY CROSSING

Need of a bridge

By the end of the fifties the government identified the lack of a bridge to the South as an economic constraint for the region. One of the main documents of governmental policy states[144]:

> "With the exception of the crossing in Lisbon, the problems of the connections between North and South by the transposition of the Tagus were solved with the construction of the Marshal Carmona Bridge in *Vila Franca de Xira*." (pp.1)
>
> "The increase of traffic between the two banks of the Tagus in Lisbon, did not suffer the competition of the new bridge in *Vila Franca de Xira*, demonstrating that the two traffics were not interdependent." (pp.1)
>
> "The government, interpreting once more the public opinion, aggravated by the sharp evolution of the traffic of the post war period, certified that it was absolutely necessary to establish the connection to the Southern bank of Lisbon, in the short range." (pp.1)

The same report refers to the need to fit the connection in the regional organization of Lisbon,

> "The connection, adequately framed in the regional organization of Lisbon, should exclusively constitute a communication device, but never be a tool of development of the urban extension of the capital to the Southern bank." (pp.15)

It even states that using the bridge for development would imply, in the long range, the construction of other bridges that would be a burden or the economy.

> "In effect, the advantages of the connection could be overcome through the pressure of population requirements, creating inconveniences in the desirable regional structuring of Lisbon and on the local economy; successive works of art would then be necessary which would never solve satisfactorily the problem, with the new link bing rendered an unproductive instrument by the circumstances to be, heavily weighting on the general economy of the country." (pp.15)

The inconvenience of various links across the estuary is raised again by a traffic specialist[145] in a technical comment of February 1992 when the second crossing over the Tagus in the Lisbon region was debated:

> "We should not transform the urban centers of the Southern bank (namely *Almada* and *Barreiro*) into new urban neighborhoods of Lisbon, but should reinforce their specialization and self strength

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143 radiocentrism, deviation between the expected and real population, delays in certain infrastructures and collective equipments.

144 MOP, JAE (1957) *Elementos para o Estudo do Plano de Fomento 1959-1964. Ligação de Lisboa à Margem Sul do Tejo.* Vol I. Lisboa, January 1957: Ministério da Obras Públicas (MOP) e Junta Autonoma das Estradas (JAE).

145 Prof. José Manuel Viegas.

> ... These agglomerates have favorable conditions for that. The (large) width of the river (and therefore the costs of each crossing) discourage (any link between banks). To understand better the consequences of this vision, let us use as reference big foreign cities crossed by rivers, such as London, Paris, Montreal and Budapest. Though varying strongly in total population, these towns have spacings between bridges crossing their rivers that are not very different from one town to the other, always around a few hundred meters."[146]

He followed on stating that the option for an urban integration of both banks implies the construction of several bridges and therefore an intolerable cost, as well as an unfulfilled need of bridges in each moment:

> "The widths of the rivers in those towns allow the systematic construction of new bridges, and therefore the effective urban integration of the two banks. In the case of Lisbon, the cost of each new crossing is so high, that, if we opt for an urban integration of both banks, we will always be with a deficit of at least one bridge relatively to what would be necessary in each moment."[147]

Montijo is postponed

It was with dismay that, people from *Montijo* and *Alcochete* saw their dream fall apart when, after several studies, in 1958 the government chose the *Almada* corridor. It is obvious that, between the two, the shortest pathway was in *Almada*. This may have encouraged the government on its decision. But the *Montijo* crossing was not to be abandoned. In fact, the same Document considers that the *Beato-Montijo* crossing should be kept in mind, justifying it on the basis of its importance to the train connection.

> "Though the solution *Beato-Montijo* is not studied at this moment, as it is sated in this report, that crossing, which is so important for the train connection proposed in the train plan[148], should not be abandoned." (pp.21)

REFLECTING ON A SECOND CROSSING: Two accepted pathways

Plans, projects and studies for the Lisbon region

Several plans, projects and studies developed for the Lisbon region or parts of its territory came up with information related to the location of a second bridge over the Tagus estuary. Each time funds were available for investment, the issue of a second Tagus crossing in Lisbon was debated.

Below, I describe some statements in these plans that molded, over the years, the views of the professionals. I intend to show that there was much information on the issue, circulating

146 CISED, February 1992.
147 CISED, February 1992.
148 Plano Ferroviário (1927) proposes the connection Beato-Montijo.

among professionals previously to the creation of the GATTEL, that influenced them and played a part in the debates for the decision on the second crossing over the Tagus estuary.

Foreseeing the consequences of expansion encouraged by the accessibility provided by the 25th of April Bridge which was under way, the Ministry of Public Works developed the PDRL - Master Plan for the Lisbon Region (1964)[149]. Professionals expected this plan to provide the development guidelines for the Lisbon region. It never got the approval of the central government after it requested a revision. It was caught by the 25th of April of 1974 military coup when the preliminary studies were being developed. One of the proposed guidelines contained in the PDRL document expresses the need to

> "guarantee the urban independence of *Setúbal* through an important development of this center to prevent that the 25th of April Bridge compromise that independency".

No reference is made to a possible second bridge in the region, with either road or train crossing.[150]

In 1966, the 25th of April Bridge starts operating and in the following year, the PDCL - Master Plan for the city of Lisbon (1967) was initiated. Approved by the government in 1977, this Plan represented the last attempt until 1982 to redirect Lisbon development and refers to the

> "increase of utilization of the Bridge over the Tagus."

The Plan also proposes an integrated road system. Just as a work hypothesis, a crossing in *Beato-Montijo* is referred, though suggesting that further studies were needed. It was also stated that the location of a second crossing was dependent from the road and/or train functions which it would have attributed[151].

In the PDCL, Lisbon was divided into Units of Land Use[152] (UNOR). The alternative of the bridge over the Tagus in *Montijo* falls in the UNOR 39[153] which covers an industrial area — *Beato-Marvila-Olivais-Chelas*. This Land Use Unit was the object of a detailed studied[154], accomplished in 1973, from which serious doubts about the viability of using this connection for a second crossing[155] seem to have resulted. The study considers a future bridge in *Beato-Montijo* as a working hypothesis. It favored, however, the crossing not in the continuation of the *Av. dos Estados Unidos da América*, but rather in the continuation of the second circular

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149 Ministério das Obras Públicas (MOP) Plano Director da Região de Lisboa (1964).

150 *A Travessia do Tejo numa Perspectiva de Política de Desenvolvimento Urbano e Regional,* Parecer NEUR/82, Ministério das Finanças e do Plano, Secretaria de Estado do Plaeamento, Instituto de Análise da Conjuntura e Estudo de Planeamento.

151 idem.

152 UNOR - Unidades de Ordenamento.

153 Estudo Urbanístico da Unidade de Ordenamento/Urban Study of the Land Use Unity. *Beato-Marila-Olivais-Chelas* (UNOR39).

154 Câmara Municipal de Lisboa (1973) Interprojecto."UNOR-39. Análise política de intervenção" Lisboa.

155 *A Travessia do Tejo Numa Perspectiva de Política de Desenvolvimento Urbano e Regional,* Parecer NEUR/82, Ministério das Finanças e do Plano, Secretaria de Estado do Planeamento, Instituto de Análise da Conjuntura e estudo de Planeamento (pp.114).

(Av. Marechal Gomes da Costa) in *Olivais-Cabo Ruivo.*[156]. By 1982 no further study of this proposal existed. The needed bridge in the UNOR 39 is justified by:

- support to the local, regional and international connections, at the time assured by the existing bridge but expected to attain the saturation in 1985;
- fast connections between Lisbon and the new airport, in order to comply with the international standards for such connections: 40 minutes;
- fast connections between Lisbon and the sea port and the industrial expansion area in *Montijo*, foreseen in the General Plan of Development of the Ports of Lisbon and *Setúbal.*[157].

The National Development Plans (*III Plano de Fomento* 1968-1973, *IV Plano de Fomento* 1974-1979, and after the 25th of April of 1974 revolution, the Middle Range Plan for 1977-80 and the Major Planning Options for 1981-84) discussed the asymmetries of the region, the need to correct them and the wanted investment policies.

The policy orientations of the *III Plano de Fomento* (1968-1973) were followed by the *IV Plano de Fomento* (1974-1979). The 25th of April of 1974 revolution prevented this last plan to be implemented. What is important to retain from this is the appearance of a new concern for framig the sectorial actions in a perspective of regional planning. This concern is also present in the 1977-80 and 1981-1984 Plans, developed after the revolution.

The *IV Plano de Fomento*[158] specifically mentions a second crossing West of the existing bridge, connecting *Algés* (Lisbon) to the *Trafaria (Almada).* This option had, at that time, a strong support of the Lisbon Port Authority[159] willing to expand the Port activity in this area and therefore seeking greater accessibility. This pathway was seldom considered, either because it was seen as an additional pressure for an environmentally important area or because it was seen as a duplication of the existing bridge.

The Plan for the Lisbon Sea Port (*Plano Geral de Desenvolvimento dos Portos de Lisboa e Setúbal*) requested by the General Administration of the Lisbon Sea Port in 1971 anticipates the creation of two expanded areas in the Southern bank: one in the area of *Trafaria-Bugio* and the other bigger in the area of *Montijo-Alcochete*. To make this last expansion viable, the plan considers the construction of the bridge *Beato-Montijo* which would directly connect this Lisbon Sea Port area and the new airport of Lisbon to the Northern bank. Due to the need to

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156 idem (pp.114).
157 idem (pp.114-115).
158 *A Travessia do Tejo Numa Perspectiva de Política de Desenvolvimento Urbano e Regional,* Parecer NEUR/82, Ministério das Finanças e do Plano, Secretaria de Estado do Plaeamento, Instituto de Análise da Conjuntura e Estudo de Planeamento. (pp.3)
159 APL - *Administração do Porto de Lisboa,* Lisbon Port Authority.

transfer the *Montijo* Air Base to make land available for industrial expansion and to build a new bridge, this is considered a second priority[160].

> "One of the most important problems which is still to be solved is the urban organization of the Peninsula of *Setúbal*. The Lisbon expansion is moving in that direction compromising the important touristic potentialities still existing in the area. This expansion is associated with the uncontrolled connection between the two banks of the Tagus. The increase of fluxes will accentuate mostly after the major poles generating traffic, such as the new airport, the specialized terminals of the Lisbon Sea Port, the new industrial plants and the growth of the existing dormitory function."[161]

The Study of Transports for the Lisbon Region (ETRL), initiated in July 1973 and organized in four distinct periods, specifically mentioned the crossings of the Tagus in the third and fourth phases[162].

> "During the third period, which was developed between mid 1976 and the end of 1977, the works concentrated in ... pursuing several sectorial studies, particularly in continuation of similar studies of the previous period (downtown, *Benfica*, Tagus crossing)." (ETRL, pp.56)

> "In the fourth period from the beginning of 1978, the works focused essentially on the elaboration, development and evaluation of alternative actions at the short and middle ranges, aiming at restoring or complementing several elements essential to the transportation system of the Lisbon region; these actions respect mostly to the transportation modes connected to rails (railway, underground, tramways), to the transportation of Tagus crossings and still to the urban and suburban transportation in buses." (ETRL, pp.56)

An interviewed professional recalled his involvement in this study:

> "I already participated in a project of great dimension, the ETRL. It was more for transportation management. Already at the time of the ETRL, there was a big multidisciplinarity, a good dialogue among professions. Technicians from the Lausanne school came. In the 70's and 80's the ETRL was not applied." (transportation manager)

In the Lisbon Train Interchange Office (GNFL) report there are some important statements related to the existing bridge, but no reference is made, to a second crossing.[163] The 1982 report states that a train crossing on the 25th of April Bridge has been planned for long, refers to the limitations of its structure due to the maximum weight capacity of the platform, and considers the construction of an exclusively road bridge as a serious mistake.[164]

> "The construction of the bridge over the Tagus exclusively for road traffic is a serious mistake under the point of view of transport coordination. The previous Minister of the Economy, *Prof. Ferreira Dias*, recognized this when he called it 'the least interesting' of the endeavors of the National Plan of 1959-1964, according to pure economic criteria. It is been made a strong effort the country has to pay directly or indirectly whose result will be to favor the road traffic at the expenses of the train transportation, exactly in a sector where this had all the conditions for economic preference."[165].

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160 *A Travessia do Tejo Numa Perspectiva de Política de Desenvolvimento Urbano e Regional,* Parecer NEUR/82, Ministério das Finanças e do Plano, Secretaria de Estado do Planeamento, Instituto de Análise da Conjuntura e Estudo de Planeamento.

161 idem.

162 DGTT/ITEP (1980) *Estudo de Transportes da Região de Lisboa - ETRL.* Relatório Síntese Vol 1. Maio.

163 idem.

164 idem.

165 Eng. Francisco Lino Neto, O Caminho de Ferro no Panorama dos Transportes Terrestres. Lisboa, 1965 in *A Travessia do Tejo Numa Perspectiva de Política de Desenvolvimento Urbano e Regional,* Parecer NEUR/82, Ministério das Finanças e do Plano, Secretaria de Estado do Plaeamento, Instituo de Análise da Conjuntura e Estudo de Planeamento.

Each time a big facility in the South bank (airport, sea port expansion) was discussed, the issue of the location of a new bridge emerged. During the debates for a second crossing before and during the GATTEL operation, the future location of the airport of Lisbon received particular attention and often conditioned the view of the players.

The idea of the construction of the New Airport of Lisbon was referred in the Master Plan for the Lisbon Region (1964) and a specific entity was created in 1969 to develop studies for its location. In the Preliminary Study of the Planning for the New Airport of Lisbon, requested in 1981, the locations considered were in decreasing order of priority: *Rio Frio*, *Porto Alto* and *Ota* (the first two South and the third North of the Tagus). The study also recommends care in saving the ecological wealth of the Natural Reserve of the Tagus and refers the importance of locating this infrastructure in accordance with a policy of regional development and land use[166].

Two plans were specifically developed to study the location of the new airport of Lisbon - one accomplished in 1972[167] and the other in 1981[168]. Both these studies favor the location in *Rio Frio*. However, the 1982 Document on the Crossings of the Tagus advises caution in this decision. Among other reasons it refers that there is no knowledge about "other European airport which was completely dismantled". But it also considers other type of constraints, including the impacts on natural environment and the difficulties in closing two military facilities: the *Montijo* Air Base and the *Alcochete* Shooting Field

The study refers that the location of the new airport in *Rio Frio* or *Porto Alto* could have impacts in the newly created (1976)[169] Natural Reserve of the Tagus. Difficulties in moving the *Montijo* Air Base and closing the *Alcochete* Shooting Field are also part of the reasoning. Following this argumentation, the document suggests a further study of a possible location in *Ota* referring several advantages such as:

"- it is only 3 km away from the highway to the North
- needs less road infrastructures than *Rio Frio* and *Porto Alto*
- it has a train connection
- implies only the cancellation of one military facility
- has better support in the surrounding communities."[170]

Nowadays, the location of the future airport is still unclear, though some professionals think that there are indications that it will be constructed in the Southern bank. These include

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166 *A Travessia do Tejo Numa Perspectiva de Política de Desenvolvimento Urbano e Regional,* Parecer NEUR/82, Ministério das Finanças e do Plano, Secretaria de Estado do Planeamento, Instituo de Análise da Conjuntura e Estudo de Planeamento.

167 GNAL - *Gabinete do Novo Aeroporto de Lisboa* (1972) *Estudo da Localização do Novo Aeroporto de Lisboa*. Lisboa.

168 TAMS - Profabril *Estudo Preliminar de Planeamento do Novo Aeroporto de Lisboa.* Lisboa, 1981.

169 Decree Law 565/76, July 19.

170 *A Travessia do Tejo Numa Perspectiva de Política de Desenvolvimento Urbano e Regional,* Parecer NEUR/82, Ministério das Finanças e do Plano, Secretaria de Estado do Planeamento, Instituto de Análise da Conjuntura e Estudo de Planeamento (pp.147).

the decision on the new crossing in the *Montijo* corridor and the abandon of the *Montijo* Air Base by the Air Force.

More recently, in the beginning of the 90's, the PROTAML considers that the need for a new airport is not urgent. As stated by one of the interviewees who was a member of the PROTAML team:

> "We were the first to say that the solution for the airport was not urgent. It is a decision for 2005 or 2015 because the (air) traffic is not going to grow in the (formerly) expected proportion. Moreover, the evolution in the utilization of airports allows us today to operate them in smaller spaces. The saturation (of the existing Lisbon airport) is only attained after 2005. Therefore, we can make the decision later ... either *Ota* or *Rio Frio* have conditions for a good airport ... we in the PROTAML bended to the *Ota* because it gathers better accessibility opportunities." (transportation planner)

One of the interviewees stated in 1994:

> "The Air Force has to leave the *Montijo* base by 1996 ... In 1985 there was a proposal for the airport to be an expansion of the commercial airport." (municipal technician)

The ambiguity on the future location of the airport from the part of the government created a lot of uncertainty in the participants discussing the best crossing alternative of the Tagus because it represented an important information missing in the process.

In 1982, a technical report on the Crossing of the Tagus in a Perspective of Urban and Regional Development requested by the Secretary of State of Planning (operating under the Minister of Finance and the Plan) analyzed a second crossing of the Tagus in a perspective of a policy of urban and regional development.

Though, with reduced circulation since it was an internal government document, this report identifies the main problems, checks references connected to the crossing in existing plans and projects, and concludes with a technical advice. The report is important because it describes the views of the several plans and projects for the area. It also allows to understand the main issues considered relevant by a team of land use and transportation planners. The technical advice provided in the document reflects the position of the team that prepared it, mostly urban and transportation planners, or better the position of a group of professionals working in the Lisbon region. The report analyzes several plans and projects for the region drawing out aspects connected to land use and transportation that might be important to build information for a second crossing in the Lisbon region.

In June 24, 1982, the report concludes:

> "The big decisions are still to be taken, namely about the restriction of growth, degree of tertiarization and industrialization, direction of expansion, functions for each bank of the river, location and phasing of the more urgent infrastructures." (pp.49)

> "The problem of the crossing of the Tagus is, among others, a rupture point of the system. It appears as a result of increased crossing needs between the two banks. In accordance with the trends of land use verified in the Southern banks, and existing projects which foresee the location of facilities that are strongly generators of traffic, such as the new airport in *Rio Frio* and the new terminals of the Lisbon Sea Port. Therefore these needs tend to grow in an uncontrollable way." (pp.50)

The report goes on suggesting the need for "the development of a structuring idea for the AML":

> "It is necessary to create an adequate structure suitable to the AML planning that, in connection with the institutional entities, allow for the development of a plan, its implementation and prospective study, and for a permanent follow up." (pp.51,52)

It also suggests a development plan for the Lisbon region before taking any decision on the crossing. Meanwhile, the improvement of the boat crossing capacity as a short and middle range solution is proposed:

> "Having in mind more direct solutions aiming to reinforce the crossing means at the short and middle ranges, it is suggested to use quantitative methods for evaluating the advantages and inconveniences of the several alternatives. These should not compromise the solutions at the long range. Increasing the number of boats and taking most advantage of the existing documents could contribute to that. On the other hand, the location of big poles of traffic generation should not be induced, while the guiding lines for the AML development are still to be defined." (p.52)

Among the plans developed for the area is the *Distrito* of *Setúbal* Development Plan (PIDDS)[171], seen by the municipal technicians and politicians as a document developed with the participation of the Southern municipalities to be a "working tool for the AML".

> "It should be said that, in the Southern bank the municipalities of the *Distrito* of *Setúbal* developed the PIDDS because they felt the need of a document developed with their participation. This plan became an important working tool for the AML." (pp.2)[172]

In the report of the first phase of the PIDDS (1987), a possible new crossing is indicated in the map of page 75, showing already an intention and acknowledgment of the *Montijo* connection by the part of the team of the professionals doing the plan.

The need for increasing the accessibility to the North bank is also mentioned in the several reports issued under the Integrated Operation of Development (OID)[173] (1987, 1989, 1990; 1989-1993):

- one of the proposed projects under these funds refers to the study of the location of the new road and train crossing of the Tagus, concerned with the saturation of the existing bridge, (pp.210)[174]
- the OID Report of 1989 states that "it is still left to be solved a key issue for the region, for which there are no bases for a decision: the new road and train crossing of the Tagus" (pp.63, OID of the Peninsula of *Setúbal*, PNIC-FEDER, Ag.1989)
- in March 1990, the European Union "approves the integrated approach to the Peninsula of *Setúbal* as being an integrated operation of development which can benefit of European Social Funds."[175]

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171 PIDDS - *Plano Integrado de Desenvolvimento Integrado do Distrito de Setúbal, Distrito* of *Setúbal* Development Plan.

172 Document on the Metropolitan Area of Lisbon 1991.

173 OID - *Operação Integrada de Desenvolvimento*, Integrated Operation of Development.

174 *Estudo Preparatório da Operação Integrada de Desenvolvimento da Península de Setúbal* - 2nd phase, CEDRU 1987.

175 *Operação Integrada de Desenvolvimento da Península de Setubal*, 1989-1993.

The view on the transportation sees the Peninsula transportation network as the privileged connection of the capital to the South:

> "Therefore, besides the transportation system of the Peninsula being to a large extent organized to respond to the commuting demand to Lisbon, it was also organized as the platform of the connection of the capital to the South." (pp. 29)

In this report, concerning actions to be implemented between 1989-1993, saturation of the existing bridge over the Tagus is listed as a transportation problem (pp.44) affecting commuting and being an economic bottleneck for "the operation of the sea ports and the development of the productive activities of the Peninsula relative to the Lisbon market" (pp. 121).

The commitment towards the improvement of accessibilities appears in the chapter on Strategies and Development (pp.46, 58) and Measures II[176] and III[177] cover the transportation infrastructures for train[178] and road[179] connections (pp.127 and pp.131). Measure II includes the widening of the platform in the existing bridge and the improvement of the connection to the North bank. No explicit reference is made in this phase to the possible investment in the construction of a new crossing (pp.63) as it is clear when the relationships with other national plans are referred:

> "These proposals are related with the National Road Plan. It remains to be solved the key issue for the region, for which it does not exist, for the moment, enough basis (for a decision): the location of the new train and road crossing of the Tagus. Also, the decision of the location of the New International Airport of Lisbon, to be evaluated in a wider context, will affect the Peninsula of *Setúbal*, due to the strong implications at the level of development." (pp.63)

This report shows that by 1990, the second crossing of the Tagus was still a remote idea for some key professionals involved in relevant regional plans. They were concerned with dual mode crossings — train and road — and with the location of this infrastructure and the airport which was not decided by then. This fact is important because this report was developed having in consideration the plans for the region under way and it shows that the team did not acknowledge any decisions on a second crossing of the Tagus.

The OID study states that the commuting trends between the North and South banks are expected to be maintained because a consolidation of the economic base of the Peninsula of *Setúbal* was foreseen. The need to balance the functions in the North and the South of the Lisbon region means that the Peninsula has greater capacity to supply many of its needs on services and, therefore, to diversify its economic base (pp.67).

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176 Infrastructure of Train Transportation.

177 Infrastructure of Road Transportation - National and Regional Network.

178 In accordance with the Trains of Portugal (CP) Middle Range Plan - *Plano de Médio Prazo da CP* (1988-1994), including the train crossing in the 25th of April Bridge.

179 In accordance with the *Plano Rodoviário Nacional*, Road National Plan under way, including the widening of the 25th of April Bridge platform.

From this survey of technical advice in existing plans and projects it is possible to conclude that:

(1) whenever there is a reference to a second crossing that link is identified in the *Montijo* corridor, with the exception of the *IV Plano de Fomento* that refers a crossing to the West of the existing bridge;

(2) part of the transportation specialists considered an exclusively road bridge without the train mode to be a waste of resources ;

(3) a permanent concern of the specialists is the need to frame the future development in the Southern bank by appropriate plans;

(4) the undecided locations for big infrastructures in the Lisbon region, such as the new airport, the Lisbon Sea Port expansion, and the future train connections to the South.

Forums of municipal technicians and politicians

During the eighties a few forums emerged in the Metropolitan Area joining municipal officials and politicians in discussing issues of the future development of the area. One of them gathered representatives from seven municipalities of the Northern AML to discuss the accessibilities and the road network. As one of the participants said,

> "several meetings were held with some results, mainly in the merging of points of analysis, views, contacts, mutual acquaintances, which allowed substantial progress ... they allowed to assess in a more shared way a set of problems." (pp.2)[180]

Later on, towards the end of the decade, another forum of reflection gathered all the municipalities of the Metropolitan Area of Lisbon to discuss the Region Land Use Plan. The participants were municipal politicians and technicians working in planning[181] who produced several documents[182] summarizing the key aspects of the issues under discussion. This forum was created as a reaction to the central government, to carry out the Land Use Plan for the Metropolitan Area of Lisbon coordinated by the Regional Commission. Opening one seminar organized in the context of this forum, the president of the Municipality of *Vila Franca de Xira* identified the

> "need for dialogue to assess the shared problems and tune a strategy of options which will effectively allow a consonance between the several decision levels." (pp.1)[183]

He stressed the fact that it has not been easy to "progress in the concretization of the intermunicipal potential for forming associations" and went on to state that the municipalities

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180 Document of the Metropolitan Area of Lisbon July 1989. "O PROT como Plano - Programa da AML" proceedings of the seminar of July 4, 1989, Document of the Metropolitan Area of Lisbon, July 1989.

181 involving about 12 municipalities and 100 individuals.

182 Document on the Metropolitan Area of Lisbon, 1991.

183 Document of the Metropolitan Area of Lisbon July 1989. "O PROT como Plano - Programa da AML" proceedings of the seminar of July 4, 1989, Document of the Metropolitan Area of Lisbon, July 1989.

behave differently than in some other times in the past because they jointly got together to debate issues and to find joint solutions. In fact he stated:

> "The merit of the initiative is totally ours because we were able to dialogue." (pp.2)[184]

He congratulated the attendants of the session because they had several meetings attended by representatives of all the seventeen municipalities of the Metropolitan Area of Lisbon" a fact considered "particularly significant" (pp. 2), calling the on going initiative the "Pro-Association of the Metropolitan Area of Lisbon". The opportunity of gathering the technicians was seen in favorable terms by another participant:

> "This is the first time we technicians had a chance to meet. Never before had the technicians met in the metropolitan area of Lisbon." (pp.13)[185]

The seminar was the result of work developed by a team of technicians from the municipalities of the Metropolitan Area of Lisbon invested with the responsibility of setting up a meeting to analyze intermunicipal problems of the metropolitan area, and to carry out a preliminary analysis of crucial issues for the municipalities intervention in the Metropolitan Land Use Plan.

Municipal technicians and politicians participating in this seminar were seeking a way of operation different from that of the central administration, calling for more participative procedures.

> "To the way of acting of the central administration, usually centralized, from the cabinet, authoritarian, imposing decisions, we want to answer which a dialogue mode, participated, very open, collecting several opinions from debates on disagreements, and retaining the options that better serve the population and the reality of the country." (pp.3)

A municipal technician intervening in the session called the attention to the need of defining common concepts of urbanism, a common language suitable for comparisons.

> "When we move to a supramunicipal level these problems have to be considered, we have to understand each other in the spoken language, we have to be able to exchange data to assess the type of change and evolution trends as they are happening." (pp. 5)

The advantages of these meetings were seen as

> "an opportunity to meet and to reflect together. They have a unique positive value to add individual expertises, putting together the little each one knows to solve a problem." (pp. 14).

Some results were also communicated in the meeting:

> "Therefore, these issues were debated among us and we reached the conclusion that it was possible to find certain consensual projects." (pp. 18)

In one document[186], the view that the municipal officials had about the metropolitan area is summarized:

> "A metropolitan area that until this date (was) passive and congested, monocentric." (pp.4)

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184 idem.

185 idem (pp.13).

186 Document on the Metropolitan Area of Lisbon, 1991.

and that they were aiming

> "to a territory more policentric and balanced, as in the quality of life supplied by its so unequal parts, and, therefore, canceling opportunities of social cohesion as in the differentiation of attractive vocations." (pp.4-5)

In these meetings the new crossing of the Tagus is identified as a need to solve congestion and once more *Montijo* is the only possibility mentioned. This was stated in interviews of the professionals who participated in the meetings.

The minutes of the meeting are not so clear, though some of the statements refer to the need to study a second crossing

> "It is urgent to start thinking on the study of the location of the new crossing of the Tagus and the restructuring of the North-South train and road connections, I am not saying in terms of projects, but in terms of studies. Studies should be carried out on the location of the second crossing and on the specific functions it will have."(pp.50)

and to the uncertainty regarding the location of big infrastructures suggesting the definition of a timetable to clarify these issues.

> "There is another issue ... and that is the issue of the context uncertainty ... there are some things that we hear talk for several years. Lisbon Airport, new bridges, railway lines, underground expansion, Lisbon Port with connections to *Bugio-Trafaria*, major circulation rings all ideas 10, 20 years old and these issues go on and on without being clarified. Therefore, I think that one of our functions is to force the existence of a phasing for the definition of issues of this kind; a phasing has to exist. In my way of seeing, it is not a result of our lack of capacity for opting and defining. No, it is a more clear expression of the absence of policy." (pp.71-72)

In the summary of key issues for the concept of development of the Metropolitan Area of Lisbon, point 7 refers to the amelioration of the unbalances between center and periphery, departing from the assumption of "a greater (capacity) train and road crossing of the Tagus", mentioning as one of the concerns the location of the new airport:

> "assuming that the location in *Rio Frio* will contribute to the gain of a new weight of the Southern metropolitan area and of rebalancing the urban network of the AML." (pp. 11)

This statement goes on to advise that the accessibilities proposed should not be dependent on the location of the new airport, but should be seen in a more general setting of land use.

A previous point calls the attention of the municipalities to the need to program the infrastructures and facilities of superior hierarchy with the non-municipal entities:

> "if investments on major national and regional transportation infrastructures and facilities are not programmed with the nonmunicipal entities responsible for their development, the municipalities are bound to waste of resources." (pp.4)

The need to restructure the road and train North-South connections and to study the location of the new crossing of the Tagus is identified as urgent by one of the participants in the report produced in 1989 (pp.50)[187] and it was raised again in the 1991 report (pp.10)[188].

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[187] Notes on the joint reflection of the Municipalities of the Metropolitan Area of Lisbon, July 1989.
[188] Notes on the joint reflection of the Municipalities of the Metropolitan Area of Lisbon, March 1991.

Forum of train specialists

Another important forum of specialists involved mostly transportation experts. In 1990 the Portuguese Association for the Development of the Train Transportation (ADFER)[189] organized a Conference to discuss the train crossing over the Tagus river. As stated in the written document issued from this Conference, what was under debate was the possibility of the train to cross the 25th of April Bridge as a way "to develop the South of the country and improve the traffic in Lisbon".

One of the members of the GATTEL states that a plan developed within Lisbon municipality considers only the East alternative:

> "Initially there were only two alternatives[190]. Only in the sequence of applying the defined methodology did we get to the three alternatives ... For example the GARLIS of the Municipality of Lisbon only considers the East alternative, never the West or the central ... Only in the sequence of the methodology are the alternatives identified. We identified all the possibilities and after that we characterized them on aspects related to physical viability, costs, environment, traffic." (GATTEL member)

Electoral manifest for the Lisbon municipality

An electoral manifest issued in 1989 by the coalition today ruling the Municipality of Lisbon refers once more to the need of a second crossing of the Tagus, listing among the priority problems of regional and metropolitan level:

> "to make compatible and program the local intermunicipal network, the regional road network and the second bridge over the Tagus; to improve the circular metropolitan connections among municipalities, reducing the negative effects of uncoordinated recent decisions as the *Cascais* highway." (pp.21)[191]

However, the electoral manifest does not refer to any specific location for a future bridge.

DECIDING ON THE CROSSING LOCATION

The need of a second bridge over the Tagus estuary appeared in several plans and projects, as mentioned above. Most of them considered its location in *Montijo,* a situation that compromised and reinforced this location in the mind of the professionals working in the region. The idea was so generally accepted and was talked about for such a long time that most professionals took for granted that the new bridge would be in *Montijo*.

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189 ADFER - *Associação Portuguesa para o Desenvolvimento do Transporte Ferroviário* - Portuguese Association for the Development of the Train Transportation.

190 in the East corridor.

191 *Lisboa, Capital Atlântica da Europa,* Electoral Document 1989.

The growing congestion of the 25th of April Bridge brought urgency to the construction of a new bridge. The problem was so serious that more recent documents, issued in the 80's, suggested remedies for temporary relief of congestion of the existing bridge, such as "the widening of its platform" and its reinforcing to accomodate a train crossing in the lower level. However, they also pointed out that this would not solve the congestion unless a "new bridge upstream the river " is constructed, as stated in OID reports and other studies.

Decisions on major transportation infrastructures, airport location and sea port reorganization and expansion are crucial for the bridge location process, since these structures raise specific accessibility requirements. However, information about such decisions was frequently unavailable or ambiguous. These studies were carried out by a relatively restricted team and were not subjected to wide dissemination, but they enhanced, particularly in the media, the publicly available information.

The debates that took place before and after the decision on the bridge location generated the "intellectual capital" that made this location process unique. The urban and transportation plans under way for the region created a space for discussion and reflection on the future of the metropolitan area. Along with information, they also created a lot of complexity and uncertainty. Several agents involved in the plans encouraged the interaction among public agencies, professionals, municipal politicians and technicians, an interaction that grew during the development of the process.

More recent concerns also brought new concepts to the debate. Among them sustainability and diversity, strongly imprinted with environmental concerns. This shift privileged the land already served by infrastructures, avoiding the opening of new fronts of development. Such a line of thought is rather suitable for Lisbon whose population is declining. However, its acceptance required from the part of the decision makers a previous awareness of this changing reality.

When the GATTEL was created in 1991, the two possible corridors with public exposure and framing the minds of the specialists were in *Algés-Almada*, already fulfilled with the 25th of April Bridge, and in *Montijo*. Nothing made people guess that other possible connections would emerge. The two alternatives had been accepted as the only ones for so long that people had the impression that all possible alternatives had already been explored.

At that time, besides the existing 25th of April Bridge in Lisbon, the other connections across the Tagus designed with the North-South traffic in mind were assumed as given facts: the *Vila Franca de Xira* Bridge operating since 1948, and the planned new bridge for *Carregado*, proposed in the National Road Plan. This is acknowledged by the GATTEL in one of its documents:

> "With influence in the behavior of the system are other infrastructures already existing (such as the bridge of *Vila Franca de Xira*) or planned (namely the bridge in *Carregado* and the metro station in *Cais Sodré*)." (pp.7, GATTEL, Document 6)

It is within the above described context that, with the agreement of the Council of Ministers (May 1989), the Land Use Regional Plan for the Metropolitan Area of Lisbon[192] (PROTAML) started in 1990 under the Regional Coordination Commission and the Ministry of Planning and coordinated by a well known geography University Professor. In October 1991 the second PROTAML report (strategic phase) was concluded.

The development of the PROTAML and the creation of the GATTEL, emerged in a period of extensive plan development activity: most municipalities were preparing their Municipal Master Plans, the perspective of a Regional Plan gathered municipal politicians and technicians together for the first time, and the Southern Municipalities had put together a joint plan for the allocation of funds under the OID. It was a period of intense activity and debate on issues concerning the Metropolitan Area, what is in some way confirmed by the creation of a Metropolitan Entity long forsaken[193].

By mid 1991 the GATTEL made public three possible locations, one of which had never been exposed before and would become highly controversial.

Ambiguous hierarchy of objectives

There is a general agreement that the main problem under consideration was congestion, but there was great ambiguity in the hierarchy of objectives. One of the interviewees even stated that "nobody remembered to ask the Minister at the beginning, what he wanted" if it was to solve congestion or the North-South connection.

In the legislation that created the GATTEL the objectives are not stated clearly, though the introduction of that document refers, *between the lines*, to two issues to be addressed by the location of the new road crossing of the Tagus estuary:

- congestion in the Lisbon region

> "The traffic between the two banks of the Tagus in the region of Lisbon has been growing incessantly." (first line of the legislation)

- the North-South link

> "Existing studies reveal the need to substantially increase in the short range the crossing capacity of the Tagus by road traffic to avoid strangling the economic development, not only of the region but also of the country, given the importance of this crossing in the connections North-South and with the border." (DL 14A/91).

This is further confirmed by the methodology established for the GATTEL since the very beginning. The objectives are stated once more indirectly:

> "The Decree Law that creates the GATTEL refers, to the incessant growing of traffic between the two banks, and to the declining road connection service. Moreover, it refers to the need to increase, in the short range, the road crossing capacity of the Tagus, to avoid strangling the development

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192 Resolution of the Council of Ministers 21/89, May 15 (PROTAML).

193 Law 44/91, Aug 2 (Creation of the Metropolitan Areas - Lisbon, Oporto).

stranglement not only of the region but also of the country, given the importance of this crossing for the North-South and border connections" (pp.4, GATTEL, Document 2).

Since there was no straightforward statement of the objectives, most of the specialists were left to their own definition of the problem. Most of them considered congestion to be the problem to be solved assuming that the North-South connection would be assured by the *Carregado* bridge proposed by the National Road Plan:

"It was necessary to solve congestion in the 25th of April Bridge." (GATTEL consultant)

"The problem the bridge should solve is congestion." (transportation planner)

"the problem is essentially the problem of interconnection of the commuting traffic between the two banks, as for satellite towns." (PROTAML team member)

Congestion

Congestion and the need to assure greater accessibility between North and South banks was a permanent concern. One of the remedies proposed was the widening of the platform of the existing bridge and the construction of a train connection. These solutions are presented in the studies developed under the OID :

"The saturation problem in the 25th of April bridge will be partially solved, in the middle range by widening the platform of the existing bridge. On the other hand, the flux of passengers can improve substantially with a train connection in the lower platform of the bridge. However, as it was analyzed in the report of the first phase, not only the problem of the train connection for goods exist, as the road traffic will again attain the saturation pretty soon. A new bridge upstream of the existing bridge is a development factor for the Peninsula of *Setúbal*, as well as for the South of the country. Naturally, the structuring of the system of transportation of the Peninsula and the AML are further related to this issue." (pp. 210, Preparatory Study of the OID, 2nd phase, CEDRU Set.87).

At this point there were no references in the document concerning the agency responsible to make the study, or the way it was going to be funded, leaving these categories blanked with an ambiguous "to be defined". The OID study goes on stating the dependency of the Southern bank from the capital and raises the issue of intra-regional connection deficiencies as affecting negatively the economic activities of the Peninsula.

"The proximity to Lisbon and the inter-relations established explain the dependency of the South Bank from the capital. The transportation system of the Peninsula is mostly organized to respond to the demands of commuting to Lisbon."

"In the present situation the (road) network privileged the crossing function of Lisbon to the South and the access of the North bank to the West and South beaches. On the other hand, the intra-regional connections were necessary to support the negatively affected economic activities of the Peninsula." (pp. 29, Study of the OID, 1st phase, MPAT 1990).

In sum, lack of transportation infrastructure (pp.42), high dependency from Lisbon (pp.44), saturation of the existing bridge (pp.44), rupture in the *Barreiro* terminal, EN10, EN307 (pp.44), difficulties of access to leisure areas (pp.44), deficient intermunicipal connections (pp.44), are some of the key issues identified in the OID study.

According to the report, the proposals of infrastructures and communications are coordinated with other plans. Curiously, the study states

> "These proposals (of infrastructures and communications) are articulated with the National Road Plan, leaving unresolved a crucial issue for the region and for what no adequate basis exist: the location of the new road and train crossing of the Tagus. Also, the decision concerning the New International Airport of Lisbon, which has to be analyzed in an expanded context, and which will always affect the Peninsula of *Setúbal* due to the strong implications that it will have at this development level." (pp.63, Study of the OID, MPAT 1990).

The key objective stated for the Peninsula of *Setúbal* is to seek the balance of functions between the North and South banks and the reduction of unemployment to 10%. Furthermore, the bottleneck created by the saturation of the bridge is considered to be negative to the productive activities of the Great Lisbon.

> Identifying the objectives:
>
> "The commuting values are expected to be maintained ... the objective is to reduce unemployment to 10% of the active population with the creation of 38,000 new jobs ... the tendency is to establish a greater balance of functions in the region." (Great Lisbon) (pp.67, Study of the OID, MPAT 1990).
>
> Identifying consequences:
>
> "The saturation of the 25th of April Bridge creates problems particularly serious to the transportation of goods and it blocks the functioning of the sea port and the development of the productive activities in the Lisbon expanded market." (pp. 121, Study of the OID, MPAT 1990).

Several actions related to these issues are proposed as a complement to improve accessibility.

> Improvement of accessibilities:
>
> - the train connection (duplication of the connection *Pinhal Novo - Poceirão*, new train line *Pinhal Novo - Almada*, train crossing of the Tagus in the existing bridge) (pp. 128, Study of the OID, MPAT 1990).
>
> - the road infrastructure, the improvement of the road connections to the North and Center of the country, namely through the IP1, by widening the platform of the bridge over the Tagus;
>
> - the development of a ring distributing traffic flux along the waterfront municipalities; (pp. 131, Study of the OID, MPAT 1990).

And it goes on stating:

> "(These measures) reorganize and integrate the economic urban tissue, making it simultaneously accessible to the regional (mostly located in the North of the Tagus) and the international markets." (pp. 133, Study of the OID, MPAT 1990).

The need for a new crossing is referred in the PIDDS (a plan developed for the *Distrito* of *Setúbal* under the Association of Municipalities), in the Electoral Manifesto for the municipality of Lisbon of 1989, in the documents developed during the period of reflection of the municipalities of the Metropolitan Area of Lisbon (initiated when it became known that a Land Use Plan was going to be developed for the area), and in the first PROTAML document on transportation. Therefore, a new crossing was up front in the mind of the professionals.

Initial alternatives

Interviewees were at the beginning mentally framed for the *Almada* and the *Montijo* pathways. The later was the dominant option. The proposed bridge for *Carregado* was assumed to be the response to the need of a North-South regional/national connection.

This frame of mind is obvious in the specialists hired to work in the GATTEL. In the interviews they reported the way they saw the problem at the preliminary phase:

> "Initially it was agreed the corridor would be *Montijo*. It came from before. The other alternative was the corridor parallel to the present bridge in *Trafaria*." (GATTEL member)

> "Initially we accepted such due dates because we thought it was peaceful. There were two possibilities — *Algés* and *Montijo* — and *Montijo* was peaceful. The fact that we considered the situation pacific with two alternatives, led us to accept the imposed due dates. It seemed a relatively easy problem we never thought it was going to become so complex. Nobody anticipated what came afterwards. Initially there even was a meeting when things are stated as follows: the solution is *Montijo* and therefore it is necessary to find technical data to justify it and that did not shocked me, I myself was convinced of that." (GATTEL member)

The two generally accepted alternatives among the technicians at the beginning were the governmentally chosen option of *Montijo* and the West pathway. This last one was considered the "academic alternative for the sake of comparison" as a technician put it, because there was an implicit agreement that *Montijo* was the solution. The West option was not welcome by the municipality of *Almada* due to difficulties of insertion in the road network and its possible negative environmental impacts. It was also seen by several traffic engineers as a duplication of the existing bridge and most urban planners considered that it was going to reinforce the unbalanced development of the metropolitan area, causing more expansion towards the Atlantic littoral.

THE GATTEL

The GATTEL was innovative in its set up as well as in its operation, when compared with existing public agencies and governmentally mandated study groups. Its Planning Team developed a process that also proved to be innovative. First the GATTEL Planning Team established the phasing to be submitted to the GATTEL Steering Committee. Departing from a traditional model of operation, the team made the link between the rational instrumental model and a more flexible procedure mode. This shows concern for making compatible two different settings and it is described below. This phasing, of the GATTEL project, included the tasks and responsibility of the participants, documents to be issued, due dates, and identified two decision levels: technical and political (see below phasing of GPT).

Besides, the GATTEL organized a work methodology to study the location and design of the crossings that was inspired in similar studies done elsewhere in Europe, but was adapted to comply with the time limitations imposed (see below innovative methodology).

Phasing of the GATTEL project

The phasing developed by the GATTEL Planning Team (GPT) was submitted to, and approved by, the Steering Committee. The phasing was pretty much followed, step by step, during one year. This proposed phasing was organized in a chart, that clearly registered two distinct levels: the decision level and the technical level. This drew a sharp line between the political and the technical responsibilities (see Figure IV.13). The chart with the phasing was a typical form of the rational model, describing the objectives to be accomplished in each phase, the tasks to attain them and the products (reports) to be issued. Furthermore, the GPT assumed the role of providing technical advice, leaving the decision role to the higher levels of the hierarchy — the GATTEL Steering Committee and the Ministry. In fact, this is as much interesting as both the way the chart was set up separating the decision from the technical level and the procedure followed up by the phasing show the team acceptance of the usual traditional procedures of these settings. They were playing by the rules. Technicians working in the GPT saw themselves as providers of technical advice, leaving to the political setting the decision making function. They saw their role as exclusively technical. They considered the final decision to be the responsibility of the GATTEL Steering Committee and the Minister.

Innovative methodology

Methodologically, as proposed by the GPT and approved by the GATTEL Steering Committee, the idea was to start with an exploratory phase, with identification and prioritization of the alternative corridors for the crossing. The GPT was assigned to do the prioritization of the corridors, considering the possible effects that a bridge location in each could have on the biophysical and environmental contexts, the land use development, and the transportation system. Only after this, would the team add technical and economic viability factors. The second phase focused in the actual design of the linked structures, inside a selected corridor by the government as priority for the location of the new road crossing of the Tagus. Finally, a third phase was to contain the development of the building contract. The phasing of the GPT was internally presented to the Steering Committee and approved. The first phase was tightly followed.

The idea of the GPT was first to identify and select a corridor, and only afterwards to develop the specific bridge crossings inside the selected corridor. The objective of this procedure to shorten the overall time needed to carry out the necessary studies for supporting the decision on the location. Therefore, the initial phase dealt exclusively with broad issues, leaving the aspects related to specific design of accesses, road links and urban integration to a later stage. Furthermore, a corridor was considered feasible by the team if it allowed at least one possible alternative within it.

In this first phase, from reports were issued: Document 1 - Identification of the corridors; Document 2 - Methodology of the evaluation of the corridors; Document 3 - Profile of the study area; Document 4 - Evaluation of the corridors under study. It was not programmed the production of any external report in the in the first phase. In the case that it would be impossible or undesirable to select only one priority corridor, the idea would be to consider two corridors and to carry on the studies on both of them. Another possibility was to exclude the corridor considered with less priority and compare the remaining ones, or even to develop bridge crossing possibilities inside the two corridors and make comparisons among them.

Even with all the exchange of ideas that was going on in the metropolitan area, previously and during the studies of the GATTEL, the crossing brought up during these processes was always *Montijo*, the historical alternative. It is within this setting, that an unexpected solution was developed. During the studies the once innocuous straightforward decision between two obvious one choice alternatives was transformed into a controversial decision process, between an unexpected additional option and the previously obvious solution.

It is stated in the legislation that there already existed studies for the location of the new bridge and that there was a need for developing further studies essential to the decision on the second road crossing in the Lisbon region. It is possible that the government, and the Ministry of Public Works in particular, were convinced that all the necessary studies were done, specially on alternative locations and environmental impacts. The legislation states that there are already studies available particularly about alternative locations and environmental impacts. Maybe the Minister thought that what was necessary was to put the existing studies together. Furthermore, it is possible that the funds were only provided to accelerate the process of preparing the information, given the urgency the issue of the crossing gained. From this point of view, the central idea of the Minister could be to structure the information tactically, with the aim of legitimizing an already taken position.

Curiously, when I asked GATTEL individuals about specific previous studies on the location and construction of the new bridge, they did not seem to know them. They knew well, however, the several studies developed for the region for several other reasons (ITRL, ETRL, PIDDS). They were used to build up the characterization of the region and provided the basic data, afterwards up dated with the more recent information that was being collected. The last study I came across offered technical advice on the Tagus crossings dated from 1982. Meanwhile, considerable change occurred in the Lisbon region. It is likely that because of this the government thought it would be urgent to rethink the issue.

The GATTEL Planning Team process

According to the phasing developed by the GATTEL Planning Team (GPT), the decision level is responsible for the approval of standards, for their evaluation, for the approval of

documents, and for the selection of the corridors to be studied. The Planning Team is responsible for the definition of criteria, the methodology of evaluation, the hierarchy of the corridors, and the production of documents at a technical level.

The process coordinated by the GPT was organized around three groups — the data base team, the consultants, the Dutch consultant — coordinated by the Planning Team. As soon as these group began operating, the working procedures were maintained informal. The GPT members worked within their fields of expertise -- urban planning, environment, transportation — bringing to the table, on a regular basis, the general debate of the issues under consideration. Whenever a hired consultant was working in a subject, and the GPT felt the need to clarify information, the expert was also invited to the debate. This also happened, when several ways of seeing the same problem arose. Wanting to gain a deeper understanding of some specific issue, the GPT frequently invited other professionals of the area of expertise under consideration, besides the consultants. It was during these debates that most of the information was exposed, digested, transformed and gained meaning.

These debates began to be "so interesting", as someone put it, that very often the Steering Committee members joined in the debates. Besides having involved top professionals with deep knowledge on the area, the team was able to keep in mind the target. It was this target that operated as the framework of the process. These debates played and important role in the use of the technical information, exposing it and enhancing its use through the argumentation developed. Reports, comments and data developed by the consultants were brought to the table and debated by the group.

Some GATTEL members felt, for example, that the professionals working in land use for the PROTAML were not giving them tools and criteria for analyzing the bridge location in the metropolitan area. Part of this resulted from the fact that the PROTAML was still in the preliminary stage, as some of the interviewees explained. Therefore, until a certain point, the GPT developed its own land use criteria, that was to become later adopted by the PROTAML team, as reported by the interviewees.

As a professional interviewed stated "the PROTAML team was specifically directed to land use" and therefore it was "the adequate entity to provide a reference in this area". The GATTEL Planning Team felt the need for land use guidelines. This "forced them to develop their own land use framework", as one of the professionals involved in the studies stated. Therefore, the lack of land use tools was considered a gap in the information. This difficulty was later overcome during the development of the studies, as a result of coordinated collaboration of professionals from both teams.

The need to collect updated information in a period when the General Census of the population was still under way, made them recur to informal networking to fill in the gaps of available published data. Professionals working in public agencies, frequently municipalities,

were contacted by the GPT and asked for the needed data. As an incentive, and a form of good will, this exchange was done with the promise of some added valued. For example, the GPT promised to return the data structured and processed to the agency of origin. Some of the interviewed technicians mentioned this, suggesting that it would have taken ages to do the same work indoors, due to the agency shortage of resources (as one municipal technician said).

With a flux of information established in and out of the GATTEL, informal networking went on in a continuous basis. These informal contacts contributed to putting together up dated information. They contributed to build trust and to test metropolitan actors opinions on issues arising within the process, and for these players to get informed about the work going on at the GATTEL. This was a good device to build acquaintance and trust within the agencies of the metropolitan area, particularly in the municipalities. It also worked as a way to overcome interaction needs in preliminary stages of the process. As a GATTEL member said, "for example after a formal meeting during a conversation, a new subject would be brought up to test how they felt about it". This allowed for the checking of the general opinion on the subject and the issues it involved.

> "To evaluate the corridors, the following municipalities were contacted: *Alcochete, Montijo, Barreiro, Almada, Lisboa* and *Loures*. This allowed for an additional collection of information and provided some reflection to evaluate the corridors." (GATTEL member)
>
> "Deeper contacts were developed with *Almada* and *Loures* regarding the alternative connections." (GATTEL member)
>
> "*Alcochete* and *Montijo* created the Association for the new bridge." (GATTEL member)

Some key players were left out of the process, among these were some ministers and the civil society at large. However, some key local politicians and members of the technical community of the metropolitan area were involved. Informal networking for the gathering of information frequently involved local technicians, allowing for the collection of some inputs along the way. In this way the process of the location of a second crossing started being more familiar, at least within the professional community. Some public agencies sat in the GATTEL Advisory Board which, however, had a limited expression. Nevertheless, there was no formal wide involvement of citizens, except for a public hearing on the *Montijo* alternative. This alternative was strongly opposed at this hearing.

Informal networking was extremely positive in enhancing the use of the technical information. While bringing up new issues, the GPT could gather further understanding on them. The professionals exposed to the issues were forced to reflect on them. Frequently, they also had to revise information to take a stand on an issue. This happened with the decision between options A and B in the *Montijo* corridor. The boat traffic was an important factor in this decision because it determined the height of the bridge. To justify the importance of considering the boat traffic, one of the interviewees stated that it was a vital issue because, as it was stated in a publication on a bridge in Normandy, it was a source of accidents:

"Since 1960 that with the boat traffic there is one bridge that falls every year."
(GATTEL member)

The same person went on clarifying that the boat traffic in the two channels that the bridge had to overcome was a crucial matter for the decision between options A and B in the *Montijo* corridor.

"Option A in *Montijo* had to pass over two channels, the North channel and the *Barcas* — boats channel. Option B only had to overcome one. Therefore, option A was more expensive than option B. In a meeting that we had with the Ministry of the Sea, we were discussing this problem when we found out that the *Barcas* channel (the one further away from the bank) was only used by boats for sand and fuel transportation to the *Carregado* Power Plant, passing afterwards under the *Vila Franca de Xira* bridge." (GATTEL member)

"Therefore, while the North channel needed a 400 meters high clearance, the *Barcas* channel only needed 120 meters, due to the type of boats using it. So, the construction costs could be lower than if two bridges of 400 meters were needed, as it was thought initially. This made the choice to fall on option A and to abandon the initially considered option B this was." (GATTEL member)

The fact that these boats were able to pass under the *Vila Franca de Xira* Bridge revealed that the hight they were considering to overcome this channel was excessive. In accordance with the interviewees, this was the result of a meeting that sat at the same table individuals from the GATTEL and from the Lisbon Port Authority to analyze the boat traffic on the Tagus in the areas where the two options of *Montijo* touch the North Bank. This meeting resulted in a revision of the preferred alternative, and the work concentrated on the alternative A.

Expo 98 was a key player in the choice of option A. As soon as the Ministry of Public Works, Transportation and Communications announced publicly the choice of alternative B in the *Montijo* corridor, the Expo 98 Commissioner expressed his concern about this choice in the newspapers. He was worried by the fact that one of the pillars of the future bridge was going to fall in the *Olivais* dock. As the Expo 98 team designed the project taking the most advantage of this piece of the waterfront, the possibility of the bridge falling on top of it caused great distress. The GATTEL maintained contacts with the Expo 98, and in its Document 13 stated that the alternative A of the *Montijo* corridor "under the point of view of the exhibition is the one that provides the best access"[194]. But not everyone agreed on this. According to some technicians, the *Barreiro* and *Montijo* corridors provide the same access to the Expo 98. One of the GATTEL members stated:

"Though important, the location of the Expo 98 was not known. Initially, the possibility that it would be in Canada was still under discussion . This alternative (*Barreiro*) gives the Expo 98 the accessibility that any other corridor would give." (GATTEL member, May 94)

It is not until September 1991 that the GATTEL study about the three alternatives is completed and handed in to the Minister. As soon as these alternatives were made public, a

194 *Memorando Síntese: Trabalhos Desenvolvidos, Nova Travessia Rodoviária sobre o Tejo na Região de Lisboa*, GATTEL, Documento 13, July 1993 (pp.16).

growing debate in the media (television, newspapers, periodicals) and meetings emerged, involving a substantial amount of entities and generating considerable controversy. A complex, multi-objective, no unique answer problem was at stake.

Peculiarities of the GATTEL

The GATTEL provided an interesting institutional setting. Given, financial and administrative autonomy by legislation, the group set up an operation similar to a private consulting firm. This resulted from the profile of the Steering Committee Chairman, seen by several actors as "a man from the private sector". Moreover, the GATTEL structure and mode of operation resulted from a document written by this Chairman to the Minister of Public Works when he was invited to assume that role. This Document states the main principles to be followed.

Answering my question on why they decided to adopt for this organizational structure, a GATTEL member stated:

> "The idea behind it is the conviction that through a bureau directly dependent from the Minister a greater dynamic would be brought to this complex process, enhancing the possibility of success."

When I asked why they considered the collaboration of the several ministries, the answer was:

> "That resulted from the specificity of the work. This work has to do with several ministries and it was understood, since the very beginning, that there should be representatives of the ministries. We identified the relevant ministries for the work." (GATTEL member)

and afterwards, describing how the work was done:

> "The Steering Committee had informal meetings at least once a week. These meetings had proceedings and a report was sent every two weeks to the Minister, and later on also to the Secretary of State[195], at the request of the Minister. This besides the direct access we had to the Minister."

Within the GATTEL, a Planning Team was created for developing the possible alternatives of crossings over the estuary. This team, formed by technical consultants hired through informal networking, covered areas such as transportation management, environment, urban problems. The proposals developed by the GATTEL Planning Team raised a number of issues that underwent a long debate. Among them stood the recognition of the limitations of the radial transportation model operating for long in Lisbon, and the possible solution of overlaying on it a grid model. Very important was also the attention given to the possibilities the future bridge opened as a potential tool for restructuring the metropolitan urban space. In association with these questions, the location of the future Tagus bridge in Lisbon acquired a new relevancy in the debates that proceeded, even after the governmental decision in 1992 of constructing the new bridge in the *Montijo* corridor.

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195 of the Ministry of Public Works, Transportation and Communications.

Even more interesting was the way of operation of the GATTEL Planning Team. They worked with tight deadlines for specific outcomes, under a previously defined phasing methodology approved by the Steering Committee. This GATTEL Planning Team was made up of four professionals who did consulting work in the region. The team had therefore a deep knowledge of the area, but more important, they knew where the needed data was, and had large experience in working with this type of studies. Besides, three of them had previously a good experience of working together.

One member describes the team

> "The GATTEL technical group was created by the GATTEL Steering Committee. It had a Chairman and aides, and was organized in several components: design, environment, land use, and traffic." (GATTEL member)
>
> "X brought with him Y (connected to the land use) and Z (in transportation, who is his aide). Both had worked with X in a private firm." (GATTEL member)
>
> "Some members of the team had worked together before in a private consulting firm — X, Z and Y. They were invited by T. W, the responsible for the environment, was invited by the Steering Committee member of the environment." (GATTEL member)
>
> "The permanent GATTEL team is very reduced in size, but it includes people with a wide experience and knowledge of the Lisbon Metropolitan Area. They also have a good network of contacts, allowing for a good selection of consultants and giving access to a large quantity of information. The role of the GATTEL technicians was to coordinate and direct the hired consultants." (GATTEL member)

This arrangements had the advantage of putting together a well knit team, with a wide knowledge of the area and able to direct the studies to the crucial aspects. Although some of the Documents produced by this group had considerable diffusion, the quite elaborate job carried on by them was mostly unknown to common citizens. Part of this results from the belief that this type of decisions should be conducted by indoor professionals (who assume the compromise of not talking about the work being developed) and committed technicians, and the conviction that the results should have restricted access.

The amount of knowledge that emerged out of this process was only possible because the coordinator, together with the whole GPT was able to assemble the information coming from the different sources, inter-relating it, and giving it meaning. This would not have been possible without the ability to resort to various sources of information, the deep knowledge already existing about the area, a good network developed during previous studies, and the effectiveness of a newly created network. Two other aspects seem to have played a role: the resources made available by the GATTEL structure and the legitimacy of this governmental organization which allowed the accessibility to a wider pool of information.

The coordinator of the GPT assumed here a crucial role, supported by a highly motivated team. They had between their fingers the responsibility of providing the rationale for a crucial decision about a major infrastructure that would shape the future of the Metropolitan Area of Lisbon.

THE UNEXPECTED ALTERNATIVE

The members of the GPT, in reviewing the data and discussing the issues, began to conclude the two initially considered alternatives, including the one that everyone agreed on initially, were unsatisfactory. In a way, that was a surprise to all, including themselves. They came out with a third alternative, which had not being exposed to the outside when the GATTEL made public the unexpected solution, it caught everybody by surprise.

After understanding the rationale of this option and of getting used to the idea, a growing number of professionals adopted it, some of them enthusiastically. Even those who insisted in sticking to the East corridor, the one that initially gathered a wide consensus, said during the interviews that both bridges were needed and the choice was just a question of priority.

Initially, in accordance with the original problem definition, the search was for a solution for the traffic congestion. As the studies developed and the unexpected alternative emerged, the discussion was shifted to the desirable future of the metropolitan area. The Southern municipalities were forced to revise their options, and mostly they lined up according to their geographical location.

At the time of the decision, the municipalities were developing their master plans. Since the other possible connection had always been *Montijo*, most of them considered only this option making it rather difficult to reframe the whole plan without considerable changes. This situation was particularly dramatic for the Southern municipalities which would be under extended restructuring with the creation of new accessibilities. On the other hand, the West Southern municipalities more affected by congestion were eager to improve their accessibility to Lisbon. The consequence was that the municipalities to the West — *Almada*, *Seixal* , *Barreiro* — favored the central corridor while those to the East — *Montijo*, *Alcochete* — strongly defended the *Montijo* corridor. *Moita*, bended more or less equally for the two locations.

It is at this point that several factors, other than accessibilities and infrastructures, came into play. The AML ecological importance, the socio economic profile of its municipalities, and the relevancy and constraints of the region mobility provided the context of argumentation supporting the different alternatives. The unexpected central corridor option, came to be considered the most suitable by the GATTEL Planning team as stated in their reports, but it was considered in a similar stand as the Eastern corridor in the Conclusions signed by the Steering Committee.

The central corridor connects Lisbon to one of the most populated areas in the South. News in the media, and professionals, testified that this option had higher potential for capturing the traffic presently overcrowding the existing bridge. Therefore it would more efficiently address the congestion issue. According to them this comes from information

contained in an origin-destination study developed by the GATTEL which was never made public.

Some professionals also considered the central corridor an economic opportunity for two depressed areas in the two banks — *Chelas* and *Barreiro*. Besides, it also avoided damaging the amenities in the periphery of Lisbon and prevented the opening of a new front of development, taking advantage of already infrastructured spaces. It became an attractive solution for the environmentally concerned individuals. The advantages mentioned were not considered goals at the time, but they were seen as strong advantages of this solution.

> "In the meantime there was the decision about the Expo 98. The bridge was decided in the town ring, and the Expo 98 in the limits of the town. Instead of restructuring *Olivais* they were going to restructure *Chelas*. Between Sept. 91 to Jan. 92 Lisbon bended to the PROTAML (proposed central corridor)." (transportation planner)

The whole debate on the location of the new bridge centered around the new option and the solution previously thought to be correct. This last one was strongly opposed by environmental groups. They argued that an area with high natural value would be irreversibly damaged. This option located further East, in the outskirts of Lisbon, connects an urban industrial area in the North, with a rural region in the South bringing over it new development pressures. In spite of this, the two Southern municipalities of *Montijo* and *Alcochete* were eager to house the bridge convincd of its importance "to improve the quality of life of their residents".

Individuals of the technical community interviewed considered that none of the activity and participation related to the discussion of the central corridor influenced or even played a role in the final decision, clssifying this decision has have been essentially political. One even stated that

> "it was never seen in this country such a great detachment between the political decision and the technical advice." (municipal technician)

Suprise with the unexpected alternative

The unexpected alternative, which became known as the central corridor, came up as a surprise and shock for most of the professionals working in the area. It challenged the specialists frame of mind.

One of the municipal technicians said that when he was confronted with the central corridor option, he was caught by surprise, and asked for time to think things over. A few days later he had reviewed the information in the municipal plan and put together information to make this new option feasible. This was actually confirmed by one of the members of the GATTEL Planning Team. Surprise is evident in the statement made by the specialists involved when they were exposed to this new alternative.

> "No one had seen what was under our eyes ... After that it became evident that this (new alternative) was the solution. It is amazing that nobody had seen it. In fact, it is so obvious and

better relative to the others. It is incomprehensible how it took so long to find out." (municipal technician and transportation planner).

"When the three alternatives were communicated, by a delegation of the GATTEL technicians, the Municipal Plan was already under way, and I was surprised. Our big concern was at the level of impacts and how it was compatible with the objectives of the municipality." (municipal technician)

One professional even associated the emergence of this new option as generating shock:

"The internal reaction to the *Barreiro* (option) generated crisis and debate ... the main issue was the scare of a possible massive entrance (of vehicles) in *Barreiro* and the central area of Lisbon. This option meant a massive entrance of cars in an area consolidated by the tertiary." (GATTEL member)

The new alternative was generated because professionals responsible for studying the new crossing were unsatisfied with the initial options — *Montijo* and *Algés* — and saw a greater opportunity in this new alternative.

"In terms of transportation *Montijo* would not solve, congestion. To solve congestion it was necessary one (bridge) side by side with the present one. The vital issue was the land use." (GATTEL member)

When the choice of the Minister was known to be in the *Montijo* corridor, one of the interviewees stated with grief :

"The opportunity to connect the North train line to the Southern train line was lost with this decision."

Generation of alternatives

But what led the GATTEL team to generate the new alternative that had never been publicly exposed before? One of the specialists of the area attributed it to the expertise of one of the team members on the transportation system of the area and explained in great detail the way the unexpected alternative was generated.

"When the GATTEL was created, its technicians, of whom I am an acquaintance and a friend, started to have meetings with the municipalities more (directly) involved in the process. For them it was clear that there existed three alternatives, due to a logic of connection of the existing or expected infrastructures. This is, we had a circular (CRIL) in the (North of the) AML that ends in two points (at the river bank). In any of them it was possible to fit a crossing. For example, if there is a highway (in the North) that ends in the river, the (natural) development is a bridge connecting it to the South. Therefore, I would have a bridge in *Algés* and another in *Moscavide*. This is clear.

On the other hand the technician responsible for transportation in the Municipal Plan of Lisbon understood that there was the possibility of another alternative — the central — because of the functioning logic of the town. You have the North-South axis in the East side. The equivalent in the West side is in the continuation of the *Av. de Chelas* and the second circular. Therefore, if the first one is connected to the South by the 25th of April Bridge, this one can also be connected to the South to an already existing axis on the other side: the speedway of *Barreiro*.

The third (alternative) appeared like this." (municipal technician and transportation planner).

The environmental component was included in the process and considered as a constraint factor. Therefore, at the request of the GPT, one of the studies carried out by an external consultant produced a map with all the possible environmental constraints in the region of Lisbon. Afterwards, a map with the road network in both banks (existing and planned) was

drawn, giving the spatial dimension of the road traffic within the area. These two maps were put together, probably for the first time by an entity looking at the metropolitan area as a whole and willing to generate all the possible connections between both banks in a through way. This procedure reproduced the two already debated corridors (East and West) and brought up a new one — the central corridor connecting to *Barreiro*. This last one had never been exposed to the public. It received two types of antagonist reactions: unconditional acceptance and strong opposing reaction. It is the *Barreiro* corridor, that gradually came to obtain the consensus of a wider technical community and generated a lot of controversy.

Planning specialists usually explain all the outcomes as a contribution of data and methodology. When it comes to the generation of alternatives there is not much insight on how they got to them. Even when questioning about it, the most common answer is "based on information and the methodology we got to the three alternatives" and there is no further explanation. However, if we talk to them for a while and ask them about how things were started and organized, and they have the opportunity to chat about their daily work, they frequently give us clues about how they got to the proposed options. This shows that either the specialists have not rationalized the steps to get there, or they think they are so obvious that no explanation is needed. It was not until further conversation that one of the GATTEL members explained:

> "In the first phase the corridors were identified. This was done by putting the road network and the environmental constraints maps together. Therefore the method for evaluation took into account the biophysical constrains and the viability of the existing road network. This procedure allowed for the identification of the three corridors, though some of them had strong limitations. All this is described in Document 2." (GATTEL member)

The knowledge about the procedures for generation of alternatives still has limited coverage in the literature. Usually, the texts mention the phase of alternatives development as just "then alternatives are generated", offering little guidance to establish the appropriate methodology for it.

THE NEED TO REFRAME THE PROBLEM

Changing the views

The unexpected alternative, which caught everybody by surprise, also dethroned *Montijo* as the first choice for the pathway. It changed the way people looked at the problem. Some of the specialists embraced the new solution enthusiastically. Here are some of the statements collected during the interviews:

> "With the appearance of this alternative (*Barreiro*) it became clear that *Montijo* could not be the solution, because it generates urban sprawl without solving the problem of transportation, dependent of connecting *Almada*, *Seixal* and *Barreiro*." (urban planner)

"*Montijo* does not solve any problem (North-South connection or traffic congestion). It has the advantage of being the best link to Spain. *Barreiro* solves the North South train connection, provides better public transportation, solves the urban road connection and has a strong social impact because it has the potential to recover the declining *Barreiro* area." (Environmental NGO member)

"From there (the appearance of the *Barreiro* option) it became clear that this was the solution. It was amazing that none had ever noticed (this crossing possibility). In fact, it is obvious that it is so much better than the others that it is not understandable why it took us so long to find it." (municipal technician and transportation planner).

"I arrived at the conclusion that the central corridor was the best for us, through the available information. In fact we were able to get to it through the astonishing numbers given: 70% of the present traffic of the existing bridge was generated in *Almada* and *Seixal*, and it was estimated that only 10% was going to be shifted to *Montijo*. It would facilitate the accessibility of the AML (persons and goods) related to the industrial requirement of the Southern bank, and the possibility of transporting the goods to the North bank for the harbor or the airport. The difficult in the circulation on the existing bridge would also benefit from some improvement. It would assure better fluxes of persons and goods within the AML. From an urban point of view, the connection to *Barreiro*, would create an opportunity of recovering a declining urban area, already dense, developing a new centrality." (municipal technician)

However, some of the participants saw otherwise. One of the interviewees pointed out that the *Barreiro* option provided for the most complex insertion in the existing urban and transportation infrastructures:

"The insertion of the central corridor is the one with the highest complexity." (GATTEL member)

Train crossing increases complexity

The possibility of a train connection also influenced the positions on the alternatives and the way their complexities were viewed.

"Some want to make the connection in the central corridor since they say the cost is reduced, the width is shorter and the construction is technically easier. That would be so if it were only the road mode. However it will have to be a train connection as well as, making the costs really high. It also has technical complexities in stability because of the characteristics of the river and the larger width to support the train connection. There are economic and technical issues too. Here (*Montijo*) the bridge is less complex than in the central corridor." (municipal official in favor of *Montijo* / NGO member)

The train connection in the 25th of April Bridge was also identified as a factor which influenced the criteria:

"The criteria changed when the trains were approved for the (existing) bridge." (environmental consultant)

Explaining how they organized the process to develop the possible alternatives one of the GPT member commented:

"For the first document we tried to see where the crossings (could) be anchored, taking into account the following items:

(1) train crossing

(2) the three peninsulas in the South bank

(3) if the corridor allowed at least for a crossing." (GATTEL member)

During a longer conversation, on my insistence on the exact procedure followed a transportation specialist explained the specific development of the alternatives:

> "When the GATTEL was created its specialists that were studying this initiated meetings with the municipalities more involved in the crossing problem. For them it was already clear that there was the possibility of three alternatives due to a matter of logic of (inter)connection of the existing or planned infrastructures. This is, I have here the CRIL (circular) of the AML that ends up in two points. In any of them it is possible to fit a crossing. For example, if we have a highway that ends up in the river, the (expected) development is a bridge that connects more to the South, therefore I would have the bridge in *Algés* and another in*Moscavide*, these are obvious." (municipal technician and transportation planner).

Another GATTEL member explained the process of generating alternatives stating that the "people used to looking at maps characterized the different elements":

> "People used to looking at maps characterized the different elements. We made traffic inquiries, analyzed physical viability, costs, projections, etc." (GATTEL member)
>
> "The corridors were identified considering the biophysical restrictions and the road network. This resulted in three alternatives." (GATTEL member)
>
> "There were three corridors already analyzed and with at least one viable crossing; this is, channel areas and needed connections." (GATTEL consultant).

Debating the corridors

The debate gravitated around the three corridors: East (*Algés-Trafaria*), central (*Chelas-Barreiro*) and the West (*Montijo*). Early in the process the first of these options was abandoned, centering most of the debate around the other two alternatives.

The *Montijo* option was defended because it allowed the creation of a circular system around the higher density urban areas in both banks.

> "The East (*Montijo*) solution is the one that allows the creation of a circular system, as it happens in all European capitals crossed by a river. In our case it has been more complicated because of the width of the estuary. The idea is to avoid the heavy traffic in town." (GATTEL member)

In the view of an interviewee, the other option — *Barreiro* — required not one but three bridges.

> "The *Barreiro* (pathway) crosses an area of high port activity in the North bank and a boat parking area in the South bank (*Mar da Palha*). This requires not one bridge, but three bridges to overcome the first stretch and increased hight because of the parking and traffic of boats close to the banks. Moreover, due to its location it had to be a mixed bridge because it allowed train crossing and an only train bridge would never be made. Therefore, we ended up opting for *Montijo*, alternative A. The tunnel hypothesis was put aside because it was very expensive." (GATTEL member)

Another point in question was related to the bridge anchoring in areas of high concentration of occupation.

> "*Montijo* is a mixed corridor: urban and regional. *Barreiro* is an urban corridor with the train, and not regional. It presents problems because it anchors in areas of excessive concentration and also with problems in the Northern bank." (municipal technician).

The West option lost support from the professionals. However some expressed their preference for it:

"M was between the central and the West corridor, considering that this last one was the least problematic." (GATTEL member)

Document 6 of the GATTEL refers to the consequences of the West corridor in environmental terms,

"It has effects over areas of high ecological value, namely with legal protection status, and over environmental quality factors, particularly noise." (pp.5, GATTEL, Document 6)

And in transportation terms:

"Repeats or unfolds the existing crossing without gaining in quality, because it extends the pathway of the most significative demand area." (pp.8, GATTEL, Document 6)

Furthermore,

"it is the corridor that enhances more development of the littoral, accentuating the existing socio-economic asymmetry in the AML, and reproducing the present spatial structuring." (pp.4, GATTEL, Document 6)

The West option, had the preference of the Lisbon Port Authority due to a planned expansion of its activity to this area (*Trafaria*). This alternative was soon abandoned, with the debate focusing mostly in the two other possibilities (East and Central). In fact, the GATTEL, in its final recommendations, suggests to leave the West corridor to the third priority (pp.19, GATTEL, Document 6).

Table IV.5 - The most used arguments on each option

	Positive	Negative
CHELAS-BARREIRO **(central corridor)**	- best alternative to solve congestion - solves the AML bottleneck - lower environmental impacts - potential to be a rehabilitation tool - balances the AML - advantages for the economy	- technical and therefore financial problems - more pollution when moving contaminated soils in the river - higher noise pollution - higher boat collision risk
SACAVÉM - MONTIJO	- responds to national and interregional functions - easier road network insertion - lower cost	- does not solve the 25th of April Bridge congestion - has negative effects on the environment - generates urban development in the remaining rural areas of the AML

Learning with the unexpected alternative

The stir around the unexpected alternative raised some doubts about the purpose to create an inter-ministerial team like that of the GATTEL. In fact, it is not clear if the creation of an inter-ministerial team was an effort to enhance collaboration among expertise areas considered crucial for the decision or just a political legitimation of the studies and decisions. Most of the professionals interviewed considered that the involvement of the various ministries was just a way to achieve greater and wider political legitimacy, but not a sound will of effective collaboration. Some of them even considered that it was "cosmetics" for the EEC/EU.

The unexpected alternative quickly caught sympathizers within environmentalists and urban planners. The environmentalists, very concerned with the consequences of the bridge in the *Montijo* corridor due to the high natural value of the nearby area, saw this alternative as a better opportunity. The group of urban planners that were concerned with the connection of an urban area to a rural area, and the problems associated with opening a new development front, saw this possibility of linking two urban areas as the solution. They saw this as an opportunity to avoid the error of three decades ago when Lisbon was connected to *Almada* by the 25th of April Bridge.

The attention of professionals concerned with the location of the bridge, shifted from congestion to the structuring of the metropolitan area, forcing the confrontation of two models of development: one that had lasted for long defending new poles of development for decentralization of the capital, and the new one calling for the "resewing of the urban tissue", directing growth to the already infrastructured open urban spaces and unwilling to create new fronts of development. Planners defending this option were against the opening of new fronts of development. They argued that demands for land development were slowing down due to declining demographic trends. They were also convinced that there was plenty of open land within the already developed land available to be used, and that municipalities could save expenses in infrastructure development over time.

Some professionals defended solutions following the logic of the poles of development, so popular in the 60's, while others were against that. In fact, according to one of the interviewees, this type of intervention "depends on the strong will and the enormous investment capacity of the public administration" stating afterwards that nowadays in Portugal we do not have neither one nor the other.

Some urban planners went even further saying that the *Montijo* corridor is associated with the old model of development, defending that self-sufficient new poles of development were necessary to decentralize the town. However, some in this group considered that Lisbon has changed since the last census and the issues were different. Another concern that was expressed regards to the lack of governmental commitment and resources needed for creating new poles of development. Most of them still had the image of what happened with the

construction of the existing bridge. They feared that connecting an urban area (Lisbon) to a rural peripheral municipality (*Montijo*) would encourage uncontrolled development in the South.

Today Lisbon is no more the tiny capital of the end of the century, the Southern municipalities had gone through substantial growth encouraged by the conquered accessibility of the 25th of April Bridge. Technology has progressed considerably allowing for increased number of alternatives. A wide transportation network is already operating serving the residents of the whole metropolitan area. Environmental concerns added one additional factor to an already very complex issue.

The problem of the North-South train connection, train passengers have still to go through the inconvenience of the best crossing linking the train lines in both banks of the river. So far, a specifically created bureau (GNFL) is responsible for assuring the train crossing in the 25th of April Bridge and, in the long range to propose a second train connection across the Tagus in the Lisbon Region. A good many metropolitan actors opposed the train crossing in the existing bridge, suggesting as more adequate a metro or tramway crossing. Several professionals working in the area also think that the train connection between the North and South lines should be constructed elsewhere.

Questioning the decision

For more than three years, solutions for the best location of the bridge, have been debated without obvious alignments within political parties, municipalities, professionals, or even the government. For the first time in Portugal a decision of the Ministry of Public Works was publicly challenged by other ministries (Ministry of Planning and Ministry of the Environment). Also for the first time, a complaint was filed by an environmental association to the Portuguese administrative courts.

During the year of 1992, the debate in the media (radio, television, newspapers, journals) intensified. A few documents had not been publicly exposed before (e.g. comments of Ministry of Planning and Higher Council of of Public Works and Transportation and Communications[196]). Disagreement arose inside the government itself, the controversy increased, and with it the variety of interpretations of the available information.

Most of the interviewees said that "it was a political decision", implying that factors other than the technical advice had far more weight. A transportation planner states that "never was the gap between a technical study and a political decision so wide". Once more surfaced the usual complaint of the technicians that the processed information was not used for the final decision came out.

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196 CSOPT - *Conselho Superior de Obras Públicas e Transportes*, High Council for Public Works and Transports.

There was a generalized opinion among professionals, and even the public in general, that the decision was not based on technical advice. Some explained this by the lack of legally defined criteria that policy makers had to follow to make and justify decisions.

There are no criteria required by law

"The way to get to the decision is not clear. There is a great degree of arbitrariness and lack of responsibility. The decision maker decides and does not have to provide full justifation. The Portuguese law does not force the establishment of criteria." (GATTEL consultant)

Another one confirmed that he could not find anywhere justification for the decision made by the government.

Justification of the government choice for *Montijo* cannot be found

"I could not find anywhere the justification for the choice of *Montijo*." (Environmental NGO member)

Still another saw it as a conflict opposing the political and the technical arenas, and stated:

The minister won the war

"The Minister of Public Works had won the war by February-March 1992, according with the information circulating inside the government." (PROTAML team member)

The following statement reinforces the idea, shared by several professionals, of the powerfulness of the Ministry of Public Works, and therefore of his autonomy to make the decision autocratically. They see this as having negative effects on planning efforts.

"Since it (Public Works) is an area that already has millions at hand, (the ministry) applies an immediatist and practical approach ... that smashes any attempt of planning. It is necessary to give structure to the decisions." (PROTAML team member)

Some municipalities felt that they were not involved in the decision. One municipal official attributed the decision to the GATTEL entity and the government. He stated:

Government and GATTEL decided all

"They have decided all. The decision was conducted uniquely and exclusively by the government. Not even by the National Assembly. Only now with the first phase of construction ready and in accordance with the law the EIA, is the subject presented for public consultation. Any citizen can provide an opinion for 60 days. The non technical summary is already available." (municipal official in favor of *Montijo* / NGO member)

Most professionals saw this process as biased and were convinced that the decision was already made beforehand.

Biased process

"The representative of planning was a member of the staff of the Ministry of Public Works and the representative of the environment was an aide of the Ministry of Public Works. The two ministries (planning and environment) that could raise objections were under the tutelage of the Ministry of Public Works." (municipal technician and transportation planner)

The decision was already taken

"This emerged as decision not as a process." (Environmental NGO member)
"The bridge was previously decided." (GATTEL consultant)

Other interviewees were convinced that although the issue is very interesting, there is nothing to be found out because the decision was

Political in the bad sense

"(The decision was) political in the bad sense, without any justification whatsoever. It was something like: that is how it should be, and that is how it is going to be. The guess is that the Minister of Public Works convinced the Prime Minister, and although the Minister of Planning and the Minister of the Environment initially claimed to be against it they were politically pressured to keep quiet." (Specialist of transportation)

"It seems a bet of a wicked witch: I want (the bridge) to be there."
(Environmental NGO member)

The situation generated mistrust and the conviction that the location of the new bridge was decided before, or by unknown ways. There was a generalized conviction that the decisions were done on the backstage.

Backstage decision

"The mistakes of the environmental organizations were: good faith in the informed argumentation, lack of understanding of the concerns of the common citizens. Most of the decisions are made in the backstage without diffusion." (environmental NGO member)

External factor

"We have to accept that there is a strange factor that shows up in the process of finding out the reasons for the choice ... you do this, this is what we want. Long before the government decision, the Ministry of Public Works had a hand in the process. There is something coming from outside. I talked with a member of the parliament that told me that these things are not decided in Lisbon but in Brussels." (environmental NGO member)

"The ministries of Planning and Environment never wanted this solution .... the Minister of the Environment is not (a person) to have ideas, the Prime Minister also ... therefore this idea came from outside, at the request of someone." (environmental NGO member)

Focusing in the solution

"We had nothing to stand on for our criticism. We had to find a pathway within the realities." (environmental NGO member)

Others considered that the real motive for the decision was property speculation:

Speculation

"Real reason behind the decision: to benefit the developers speculation. It does not solve the problems of connection by train to the Southern bank, the interregional connection North-South, etc." (environmental NGO member)

Others, still, mentioning the results of a meeting said:

Technical information does not influence politicians

"I got more precise information on the location. Information does not have great influence on the decisions of the politicians. It only changes their mind if they recognize an error. They only make the meetings to convince us (technicians), and usually the municipality does not have influence in the decision." (Municipal Technician)

There is a generalized idea among professionals that technical advice is often ignored, and that most decisions are made exclusively on political grounds. They attribut the decision on the new bridge location to the power of the decision makers, to the influence of external pressures, to the inexistence of a requirement that decision makers justify their choices.

ENVIRONMENTAL ASSOCIATIONS INVOLVEMENT

Based on the existing studies, including those produced by the GATTEL, the environmentalists considered that the Western corridor would increase the pressure over the *Arriba Fóssil da Costa da Caparica,* a protected area. This option allows for the expansion of the Lisbon Sea Port in this area, a wish expressed by the APL and an additional pressure over the protected area. Noise was also indicated by environmentalists as a future impact in case this option is implemented.

If the option was in the central corridor, construction could cause the resuspension of heavy metals produced by the *Barreiro* and *Seixal* industries and now deposited in the river bed. Additional consequences in noise and air quality were also identified as possible impacts of this choice.

Finally, the Eastern corridor is by far the one considered by ecologists to have the worst effect on the environment. This is confirmed by the studies of the GATTEL.

> "The East corridor, in any of its alternatives, is the one presenting greater environmental risks in particular in the *Alcochete* channel and in the area of the small river-island, mainly in the construction phase effects over the Tagus estuary over areas of high ecological value will also be expected." (GATTEL Document 4, pp.3.30)

As one of the environmentalists notes:

> "The eastern corridor is the least desirable solution, due to its proximity of the estuarine area and the fact that it connects to an area of special protection, created because of its considerable value to birds."

Ecological importance of the Tagus estuary

Next to the Natural Reserve of the Tagus Estuary and crossing the Special Protection Area (SPA), the *Montijo* solution is perceived as having substantial direct environmental impacts (associated to the construction) and indirect environmental impacts (because it is believed to induce further development in an environmentally sensitive area) The Tagus estuary is considered by national and European specialists as an area of high ecological quality.

Besides the Natural Reserve of the Tagus Estuary (RNET), classified under national legislation and the Special Protection Area (SPA)[197] EU directive, the area deserved other environmental qualifications. However, most of the argumentation that became public focuses mostly in these two classifications: the RNET and the SPA. Actually in practical terms the SPA, with about 40,000 ha, includes totally the RNET within its limits.

The Natural Reserve of the Tagus Estuary

Created in 1976, the Natural Reserve of the Tagus Estuary (RNET) was one of the first five protected areas created in Portugal. This area is managed by the National Conservation Institute (ICN)[198] through a local delegation.

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[197] EU Directive 79/409.

[198] ICN - *Instituto de Conservação da Natureza* - National Conservation Institute.

The Tagus Special Protection Area

In 1979, under he Bern convention, the EEC/EU issued the Directive 79/409 for the protection of wild birds and their habitats. In 1986, when Portugal became a member of the EEC/EU it had to comply with this Directive. In 1988, at EU request, the ICN listed twenty areas of Special Protection Area (SPA) under this directive. In the meantime, in 1991, the Portuguese legislation stated that a SPA was required to be approved in the national legislation by a Decree Law[199]. This led an environmental leader to state that

> "An EU Directive has more legal strength because it is a law at the European level; and, in this case, it is stronger than the (national) Decree Law that creates the Natural Reserve of the Tagus. Therefore, the delimitation made by a governmental service for the SPA of the Tagus estuary is much more important than the boarders of the Natural Reserve."[200]

Among the areas listed, figures the Tagus SPA which was only recently recognized by national legislation - DL 280/94.

In the national legislation, the DL 280/94 established the Tagus SPA, but failed to recognize the previously established boarders. The Environmental NGOs that were following the process tightly noticed the differences and complained to the EU. This was afterwards corrected in the legislation and the Minister of the Environment notified the EU Commissioner for the Environment suggesting to leave some room for further discussion of the boundaries. In the answer, the Commissioner reminded that only in exceptional situations would such an adjustment be accepted.

The Ramsar convention - wetlands directive

The Ramsar convention intended to prevent the destruction of wetlands. When the Portuguese government signed the Ramsar convention[201], one of the wetlands listed of international importance was the RNET[202]. As stated by an environmental public manager, this assumes particular importance since the Ramsar convention is signed among states (by the Ministries of Foreign Affairs) as any agreement between nations. Therefore, it has a higher status than most signed environmental conventions which only require the presence of governmental environmental agencies representatives. What is important to retain from this is that, besides being recognized in national terms as a Natural Reserve, the RNET is classified under the Ramsar convention as a wetland of international importance.

It is the threat of construction of the bridge on the East corridor that triggered the mobilization of the Environmental NGOs. Aware of the potential impacts on the environment, they collected information, conducted studies and exchanged ideas with whomever could influence the process.

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199 Liberne, Jan/Fev 92, nº37, "A nova ponte sobre o Tejo", pp. 6.
200 idem.
201 Signed by the Portuguese government in September 22, 1980 and issued in Decree 101/80, Oct. 9.
202 The other is the Natural Reserve of *Ria Formosa*, now a Natural Park.

Particularly sensible to the environmental effects of the Eastern corridor, the ecologists assumed a key role, due to the numerous actions they moved to inform and alert the citizens to the negative impacts of this solution. This made one of them state "the public image of the bridge ended up associated with the environmentalists because the resistance to the construction in the East corridor was led by us (environmentalists); we were the main opponents". The same ecologist stated that "the environmental aspect assumed excessive importance in the game" making people connect the issue mostly to "the birds of the Tagus", forgetting other important socio-economic and social aspects.

The LPN: the first Environmental NGO in the process

At this time, the League for Nature Protection (LPN)[203] saw itself as a "meeting space" for "non decision makers", as one of its leaders stated in the interview. He explained that

> "the LPN intends to be a meeting space for specialists and be part of the decision processes, although we are non decision makers ... The LPN operates as a space of communication. Not as a space of decision. Therefore it was not a structure that conducted the processes, but, obviously, there were persons who tried that certain decisions be taken".

The explanation goes on: "rarely have our members been decision makers in these processes and when that happened it was not in the context of the LPN", meaning that it was on their own and not as LPN members or representatives.

In the case of the new bridge, as soon as the first studies began being developed, "persons in the central administration (working in the GATTEL, or in the administration with connections with the GATTEL) made us aware of what was being studied" confirmed one of the LPN members. He classified the future bridge as "a structure with great impact in the land use that was going to affect the development of the region".

Invited by the GATTEL to do a "study characterizing the region", the LPN accepted the task, convinced that it was going to be a technically sound project with the environmental component integrated since the very beginning.

The explanation advanced by the LPN for being selected to do the study was:

> "probably it was recognized that the LPN was able to organize that information, or better since the GATTEL wanted to assemble the information quickly" and that would be difficult if "they had to follow the usual time consuming institutional processes. Plus, there was a specific interest in involving the environmental associations in the process. These are the objectives not explicitly considered, but for me they are obvious." (LPN member)

Disagreement over the Environmental Impact Assessment

Referring to the LPN study, one of its members recalled:

> "What was initially suggested was that the LPN develop an Environmental Impact Assessment (EIA), or a pre-study for an EIA."

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[203] LPN - *Liga para a Protecção da Natureza,* League for Nature Protection.

One of the LPN leaders considered this possibility as rather tricky, preferring that the study be not an EIA. Feeling strongly about this, he stated

> "I had to be very firm to write in the document that it was not an EIA."

He also added:

> "If it were today I would probably have fighted for not doing the study at all. I think it took authority from the LPN."
>
> "It was necessary to fight to avoid the final result to say just what the client wanted to be said; we suffered pressures from all sides, even from inside the team that produced the report."

The study developed by the LPN during the beginning of 1991 intended "to provide a reference for an EIA", stated the coordinator of the LPN team. Something like an environmental characterization, "leaving out the land use aspects." As one of the members of the LPN team that prepared the report described,

> "the information available for the Tagus estuary was organized, natural resources identified and an initial analysis of potential impacts was developed."

A preliminary version of this report, developed by the LPN and handed in by May 1991, is followed up by a discussion with the team that produced it, at the request of the GPT. As stated by one of the LPN team members interviewed

> "It was not a formal presentation but a general discussion about the location preferred by the technicians."

The LPN team was strongly in favor of not giving an opinion of the preferred site location, but to provide the GATTEL with information of the negative and positive effects of each one of the possible locations.

During this process some of the LPN members were called by the GATTEL Steering Committee members to "discuss the final position of the association." After handing in the final version of the report in August 1991, by the beginning of September/October, the members of the LPN executive board understood that "the process was escaping from our hands", as one of the interviewed LPN member stated. He added:

> "I never had great illusions on the LPN participation. I always believed that it was going to be a mascarade, but after a certain point it became completely obvious to everybody that it was going to be just that. We were told by inside sources that the decision of the Minister of Public Works would be contrary to the suggestion of the LPN. Immediately after, there was a public announcement of the decision for the *Montijo* corridor. It is at this point, that the other associations became involved, due to their concern with the direction the events were taking and alerted by the LPN which was aware that the process was escaping from their hands."

"At this point, the publicly available information was scarce", said one of the leaders of a NGO, "Document 6 of the GATTEL, was the only one available and everything else, even when available for consultation, was very restricted" (e.g., xeroxing the documents was not allowed) or obtained with great difficulty by the back door." Even in this case great part of the information was only got after the decision. When the final decision began leaning to the Eastern corridor, the environmental groups got considerably concerned due to the potential threat it represented to the important natural values of this area, and they developed efforts to

change it. They are convinced that, under the environmental point of view, it was the most undesirable solution of all the three alternatives considered.

The Environmental NGOs and the media

One of the major efforts developed by the environmental associations was the development of contacts with the media: "all the journalists and Portuguese opinion makers interested in the environment and several editors", as stated by a leader of one of the Portuguese environmental associations. These contacts were occasionally extended to some foreign media.

During the end of 1991 and the first half of 1992, the media became particularly productive in issuing opinion articles about the location of the new bridge. Part of this is already a consequence of joint actions carried out by the environmental associations. They resorted to press conferences and contacts with journalists to make public their positions and concerns.

Environmental NGOs appeal to the courts

Strong disagreement with the way the government carried out the process led the environmental associations to appeal to the courts, seeking enforcement of the law. These actions included complaints, judicial action, and development of contacts aiming to explain their views. Initially, these legal actions recurred to the National Court System, but soon turned to European instances, when they realized that their efforts to be heard were failing.

The first of these actions occurred at the end of 1992. The LPN submitted a request to the Supreme Administrative Court (STA)[204] to cancel the governmental decision to construct the new bridge in *Montijo* on the basis of non compliance with the Portuguese and European Law on Environmental Impact Assessment and Nature Conservation (409/79/EEC) and the Ramsar and Bern Conventions. This was the first complaint ever made by an association to the Portuguese Supreme Administrative Court - STA (Lisbon). The STA made public the decision on this law suit in March 17,1995, one week before the contract was signed with the consortium that was going to build the bridge. The complaint was dismissed over the meaning of "significant impacts." Unhappy with the result the LPN, with the support of the other environmental associations (GEOTA, Quercus, IDD), appealed to a higher entity in the Portuguese Court system: the Plenary of the Supreme Administrative Court[205]. By October 1995 this entity had not ruled on the case yet.

Two years passed before another judicial action was carried out. This time it was the turn of another environmental association — GEOTA — to seek court action. At the end of 1994,

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204 STA - *Supremo Tribunal Administrativo*, Supreme Administrative Court.
205 Plenário do Supremo Tribunal Adminitrativo, Plenary of the Supreme Administrative Court.

GEOTA placed two complaints in the Portuguese Courts: one for unfulfillment of the public consultation rules, and the other for lack of approval of the EIA. This environmental association was making a stand for two rights: one was the right of accessibility to information, and the other was over of the right phase to conduct the public hearing.

European law requires the diffusion of information to the interested public, but the ambiguity of our legislation leaves considerable room for interpretation. According to EU legislation[206] there is a requirement for the diffusion of information to the interested public and a demand that the opinions collected be afterwards integrated in the decision. The interested public is defined in the legislation[207] as the citizens and representative organizations of the "target region" for the endeavors considered and the "districts where it is located or that could be impacted." The legislation is ambiguous about the procedures of dissemination of the public consultation, about the supplying of documents to the interested entities, and on how to handle the responses or opinions. The public audits are considered optional, and the law does not define who has the competence to decide on its accomplishment. The duration is of 40 to 60 working days in the Decree Law (DL) and of 20 to 30 days in the Regulamentary Decree (DR). According to the DL all the studies are public, and according to the DR the consultation is "developed due to a diffusion of a non technical summary." The Evaluation Commission is supposed to prepare a report about the consultation in a period of 5 days after the end of the public consultation (Joanaz de Melo et al, 94). The entrance of the country to the EU brought with it the requirement of Public Participation. Therefore, the Directive 85/337/EEC was transferred to the national Decree Law 186/90 and specified in the Regulamentary Decree 38/40.

The public involvement in public decisions is a new development in Portugal. Required by EU Law since its entrance to the European Community, forced by the growing environmental awareness and by a more participative civil society, public participation has muddled through the Portuguese public decision processes.

The second issue had to do with a debate about the phase when the public hearing should be conducted. According to Document 13 of the GATTEL, the second of the five phases to be carried out involves Public Consultation:

> "Public consultation is expected to be developed during this phase on the selected option and in accordance with Community Directives and national legislation." (pp.6)[208]

It is obvious from what is stated that public consultation is to be conducted specifically on the "selected option", mentioning that it will be "in accordance with Community Directives and

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206 Directive 85/337/CEE article 6.

207 DL 186/90 article 4; DR 38/90 article 4.

208 Nova travessia rodoviária sobre o Tejo na região de Lisboa, Works Developed - Synthesis, GATTEL, Dcoument13, June 93).

national legislation." This, because the objective of the first phase is the development of studies to identify possible corridors and to select the location of the new crossing, as stated on document 13 of the GATTEL:

> "The elaboration of necessary studies to the identification of possible corridors and selection of the location of the new crossing." (pp.6)

In sum, public consultation was considered, according to the GATTEL Document 13, only for the alternative chosen internally in the first phase. This is the one of the most controversial issues that oppose the environmental associations and the GATTEL.

The environmental associations state that, in accordance with the Environmental Impact Assessment (EIA) legislation, the public consultation should have been carried out during the period of decision on the alternatives, while the government interpreted the legislation in a different way, considering that it should be conducted once one alternative was chosen. Therefore, it is important to describe here what are the national requirements established for Public Consultation and what is the usual procedure.

After appealing to the hierarchy without success, namely to the Minister of the Environment, GEOTA submitted two judicial actions, in October and in November of 1994, respectively to the Administrative Court of Lisbon and to the Supreme Administrative Court. The former, on a disagreement about the procedure used in the Public Consultation of the Environmental Impact Assessment (EIA) and the latter to cancel the dispatch of the Ministry of the Environment and the Ministry of Public Works, which approved the EIA. By the end of 1994, beginning of 1995, the suspension of the dispatch requested by GEOTA was denied.

At the end of 1992, another complaint was filed to the Courts connected to the bridge issue. This time the disagreement was over the transfer of the Special Protection Area (SPA) classification to Portuguese legislation and the setting up of the limits of a SPA for the Tagus estuary. This SPA includes the Natural Reserve of the Tagus estuary and an additional expanded area. Proposed by the Portuguese government to the EU in 1988, its integration in the national legislation was expected to be done up to 1990, but this did not happen.

It is not until 1994 that the SPA becomes part of the Portuguese law. This happened only after efforts of two of the Portuguese environmental associations (LPN and GEOTA) alerted the EU to the failure from the part of the Portuguese government in accomplishing what was already agreed. Enacted in legislation in 1994[209], the SPA appeared with different borders than those previously proposed. This generated a new exchange of letters between the Portuguese government and the EU that ended up with the Ministry of the Environment promising to restore the borders, but keeping open the possibility to rediscuss the issue. In 1995 the original

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209 Decree Law 280/94, Nov 5.

accepted limits of the SPA are finally correctly established in the Portuguese law. The Commissioner for the Environment congratulated the Minister of the Environment for the correction of the SPA limits in the Portuguese legislation, and reminded that changes in the limits are only allowed in exceptional cases.

During 1992-94[210] GEOTA was the most visible NGO connected with the bridge issue. Most of its work was developed in analyzing documents and in generating public intervention, exposing the issue. They analyzed information and produced with it several written documents (flyers, publications, opinion articles). Members of GEOTA wrote several articles on the bridge and developed contacts with journalists. The LPN, which initiated key environmental actions, was, for a while, struggling with internal difficulties and had to slow down. An environmental association recently created got also involved in these actions — the Instituto D. Dinis (IDD).

It is also during this period (1992-1994) that four Environmental NGOs (GEOTA, IDD, LPN, Quercus) published the Historical Environmental Errors, the new Bridge over the Tagus in Lisbon[211], prepared jointly and submitted to public exposure in May 1994. This was a joint endeavor of these associations, signed with two other associations — *Amigos da Terra* and *Idea*. This publication compiles a variety of information, mostly in the areas of land use and the environment, discussing the three possible location of the new crossing over the Tagus river and recommending the environmental groups preference for an exclusively train connection in the central corridor. This represents a key event in the process of joint work involving these associations.

This publication was distributed to the media, the National Assembly and to the public in general[212]. A delegation of the NGOs asked to be received by the Minister of Public Works, to offer him this publication and express their position. The Minister refused to receive them and they presented a complaint to the *Provedor deJustiça* (interview June 94).

In November of 1994 the GEOTA and the LPN reinforced their joint work after the two leaders had a trip to Brussels, in representation of the four NGOs (GEOTA, LPN, Quercus, IDD). It is after this date that the LPN develops a sound work with the European Commission related to the issue of the bridge, persistently informing about the events going on and alerting to the environmental conflicts created. A drastic change of strategy is revealed by this new way of handling the issues. Instead of trying to address all the issues that were emerging, the LPN decision board decided to focus in a few key environmental issues and stick to them persistently, avoiding to abandon them due to the numerous solicitations emerging.

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210 from beginning of 1992 to October 1994.
211 *Dossier 1, Erros Históricos do Ambiente, A Nova Ponte sobre o Tejo em Lisboa.*
212 Distribution to the Public on May 31st, 94.

In November/December 1994 two formal complaints are filed again to the EU. One was signed by GEOTA in the 29th of November, accusing the Portuguese government of not complying to the Directive 79/409/EEC on the conservation of wild birds and the 92/43/EEC on the conservation of wild habitats. This complaint also mentions the insufficiency of the EIS, particularly in the assessment of the environmental impacts of the induced urban development which was considered an unacceptable consequence of the bridge, on the edge of the SPA and without prior evaluation of the consequences. The other formal complaint was signed in the 2nd of December by LPN, Quercus and IDD, complaining that the SPA allows uses inappropriate to its protection status, and that the Portuguese government is allowing the construction of a new town without EIS, disregarding the law.

It was the first time that the Portuguese government was challenged by an environmental NGO in the Supreme Administrative Court. The resolution of the courts was mostly unfavorable to the environmental associations. This situation led them to look for higher ranked entities in an effort to have their views taken into consideration. Therefore, in July 1995 the four environmental associations requested to the European Court, in Luxembourg, the cancellation of the funding of the project that was provided by the European Commission.

The letter of the law is quite dubious about the matter at hand. The NGOs invoked the principle of the law as interpretation guide, while the government invoked the public interest and the urgency of the matter to have it carried out. So far, the courts have favored the position of the government.

This opposition process led by the associations is still going on. Though the building contract was signed for the construction of the *Montijo* option in the view of the associations several gains came out of the process:

(1) "the compensation measures were a direct consequence of the complaint submitted, because they were imposed by the EU. It is a pitty that this did not happen without the complaint.";

(2) "greater respect by the government for the environmental associations and for the patrimonial aspects", having now in some cases tried to solve informally some perceived possible conflicts;

(3) "a learning process of how the EU works" and "how to reach the right people."

Public mobilization by environmental NGOs

In 1994 the mobilization of the Southern residents for "honking"[213] actions, during one hour two days in a row, before the signing of the building contract for the new bridge, had two

[213] This action consisted in each vehicle keep pressing the horn while crossing the toll booths.

different interpretations. The media considered it a failure, while environmentalists considered that it had enough expression, though less than the previous one. In their views it was "sufficient to demonstrate that if there is a new increase of the tolls there will be a reaction", but "insufficient to mobilize to other modes of action", as stated by an environmental leader. The fact is that the context built along the process of this case prepared the grounds for the position assumed by the commuters using the existing bridge when they revolted against the increase of the bridge toll. One of the environmentalists noted that "after the blockage the journalists who showed up during the following events did not have knowledge of the dossiers — information." After some informal talk, he said he had found out that "internally, coverage of the bridge events was given to the ones not familiar with the issue", avoiding to involve those that were already knowledgeable about it.

In August 30, in a program of a national radio[214], one of the environmental leaders was warned that he could not ask questions to the Ministry of the Public Works, also present in the same program. In fact, the Minister only accepted to show in the program under the condition that he could be questioned only by the journalists and not by the environmental associations. This was interpreted by the ecologists as an additional sign of the refusal to dialogue.

Development of contacts with the Portuguese State hierarchy and the EU

Part of the actions taken by the environmental NGOs was the development of contacts, nationally or internationally, to alert to the problems emerging out of the option of constructing the new bridge in the corridor next to an area of Special Protection, important at the European level, and identified to have greater impact in the environment.

Contacts with the Portuguese State hierarchy

Nationally, the environmental associations developed contacts with three high individuals in the Portuguese State hierarchy: the President of Portugal, the *Procurador Geral da República* (PGR) and the *Provedor de Justiça* (PJ). Environmentalists also met with the main political parties: the leaders of the Socialist, the Social-Democrat, and the Popular Parties and members of the Executive Board of the Communist Party. They also met with several European Parliament and National Assembly deputies and with several General Directors.

The President of Portugal met several times with the environmental associations. They expressed to the President their concerns about governmental decisions having negative impacts in the environment, particularly the new bridge planned for the Tagus estuary. During these talks environmentalists presented their positions and argument. As part of these contacts

214 TSF.

an interest association defending the quality of life of the *Montijo* and *Alcochete* residents. They claimed a seat in the GATTEL Advisory Board.

> "The AMA, the *Montijo* and *Alcochete* Association for Defense of the Quality of Life, came from a Commission Pro-Bridge *Alcochete -Montijo*. The AMA was legally formalized in the same day the government announced that the bridge was going to be built between *Moscavide* and *Alcochete*. The AMA was an informal group of residents of these two municipalities that expected to closely accompany the construction of the new bridge and to assure an integrated and harmonious economic development." (municipal official/ NGO member)

The 25th of April Bridge Users Association

The 25th of April Bridge Users Association emerged from the events on the bridge in July 1994, to defend the interests of the users of the existing bridge against the toll bridge increases decided by the government. One of the interviewees, member of this association, defined their objectives:

> "The Association does not take a stand about the location of the bridge. The Association was created to demand the abolition of the toll fare and to extinguish the legislation of its increases." (member of a NGO Association)

This association was the result of merging two associations that were created simultaneously in each of the river banks. In fact, the decision to inverse the toll fare in the existing bridge with the objective of collecting funds to participate in the construction of the new bridge generated disagreement among the present users. Users of the existing bridge expressed their disagreement when the bridge fare was increased by 50%. The users engaged in protests beginning with the "honking" at the booths that led the way to a complete blockage when he hope of dialogue with the government was lost.

> After the increase of the toll fare one of the users, who got later involved in the 25th of April Bridge Users Association, complained "the government does not give any answer despite the pressure of the municipalities." (environmental NGO member)

As one interviewee explained this was a demonstration of anger, irritation

> "There was a demonstration of spontaneous bad will, irritation."

Though the issues are much more complex, one of the reasons that contributed to this situation was a general feeling of detachment of the bridge users from the government decision. The perception that the future bridge would not solve the existing congestion contributed to the general feeling that the present bridge users were going to pay for a bridge that would not serve them. Moreover, the 25th of April Bridge users considered unfair that this one be the only bridge in the country with toll fares.

The users, in fact, accounted the government responsible for the situation. One of them stated that "they (referring to the government) did the mistake, so they should solve it", implying that the public administration should bear the costs. This statement has ingrained the concept of "they" an indication of detachment from the decision makers (reported by one interviewee in May 95).

The legitimacy of the 25th of April Bridge Users Association was only recognized by the Minister of Public Works after the blockage occurred and several other actions were carried out (such as the slow pace crossing).

> "After that we (25th Bridge Users Association) received phone calls from the Minister of Public Works for a meeting in 27th of October. This meeting lasted 3h 30m. .... The minister considered that the Association had become a representative group." (member of a NGO Association)

Then he also explained that the association can become an ideal partner:

> "The association can have an important role and should be an ideal partner ... It is very difficult to dialogue with the municipalities, but (the association) should never be a substitute of the municipalities." (member of a NGO Association)

Referring to the 25th of April Bridge Users Association, one of the interviewees spotted attempts of manipulation from the part of the government:

> "The Social Democratic Party tried to control it (the blockage), it made the Bridge Users Commission and tried to manipulate (the situation), but was not successful." (politician)

Analyzing this association characteristics one of the interviewees states:

> "It is a temporary association of persons who do not have any social connection, cultural, of way of life, or interests, but who have a common issue and about that issue explode. They will split apart afterwards." (politician)

This type of association was analyzed at the time by a sociologist, who established a difference between the social contract or organized strikes and this more spontaneous and punctual event which explodes and disappears afterwards, leaving behind no organization.

> "It is not the social contract, the organized strikes. No, there is here a spontaneous and punctual (event) which explodes, and appears and disappears like a flash without leaving any sign of organization." (politician)

Similarity is established by the same interviewee with the protagonism in the media, suggesting that the behavior is the same as that of the media.

> "Only that moment. They have their 5 minutes of glory in front of the camera. Screaming, throwing stones ... but the mechanism is autofeeder. It is a disruptive mechanism in social terms ... because it increases the level of aggression ... and of bad spontaneity. It is negative, destructive ... this process is uniquely disruptive. It is a simplifying process." (politician)

Moreover, reductionism to one solution is seen as a potential inductor of violence

> "Everything that is simplifying leads to violence. Because it reduces the problems to a unique cause. And the solutions to a punctual and unique solution. And that is poverty and a river of violence. That one suffers aggression because he has short hair, the other because of his." (politician)

What this means is that the fact of reducing and simplifying issues to one single solution (a dichotomy) leaves out a whole range of options and participants, and makes it difficult to enhance understanding of the issues under consideration. Comparing the location of the bridge with the process of the blockage the same interviewee differentiates:

> "While the other, the first process ... was a process of enrichment of the social tissue, of the level of demand and unsatisfaction, but of unsatisfaction that led the people to demand another type of approach to the issue." (politician)

NEED OF CITIZENS INVOLVEMENT IN PUBLIC DECISIONS

One of the interviewees considered the process for the location of the new bridge over the Tagus as a good revealer of the inadequacy of the decision process. In his words:

> "This process was a good systematic revealer of the inadequacy of the merely representative decision process." (politician)

It may be argued that it was a political decision that ignored the technical information produced. However, it created along the process an intellectual capital that gained the respect of the government and forced the bureaucratic administration to revise its operation modes.

It is possibly too early to identify all the changes brought by this process, but there is no doubt that the environmental associations have changed, that the first signs of citizen groups participation are there, that the right of access to available information became a demand, that the Public Administration begins to understand the importance of assuring participation, and, hopefully, that politicians understood that elections are only one of the citizens rights because they also can express themselves through dialogue and should be heard.

Never before participation, dialogue and transparency have been so clearly stated in the political agendas. This may represent the climbing of a notch in Portuguese politics, as one of the Portuguese politicians stated

> "The appearance of the private televisions, which was more or less simultaneous with the end of the process of the bridge, is going to provide a forum for expression of these concerns. (It is also going) to increase the pressure on the political parties for all the public processes (POZOR, CRIL, dinnossaur imprints. It is the same story. All of them are required to have a more open attitude relative to the role of the state, transparency and participation, and in considering the options technically. Under this point of view, let us say we won something ... It made us climb one notch, as the Americans say. The demand on the level of the media, on the level of the protagonists, the politicians, the social or economic (agents) increased." (politician)

PART 3

THE ROLE OF INFORMATION

ARGUMENTS SUPPORTED AND CHALLENGED BY INFORMATION

During the debates information circulated back and forth and frequently acquired specific meaning to the participants involved. This section discusses key arguments which were brought into discussion and how they were handled and shaped during the process. The arguments overviewed below resulted essentially from the use and discussion of information in debates and illustrate the development of new beliefs shared by some of the actors. This shows how information achieved powerful meaning and how it influenced the mind of the participants.

Information that circulated before and during the decision process structured the minds of the specialists and often was transformed into meaningful images, which emerged influencing the way people saw the issues. Along the process images were used, created, reformulated and even challenged. This was perceived by one of the professionals active in the debate, who stated that decisions are influenced by images:

> "The decision is influenced by images that individuals or groups have, by the participants environmental perception, and by administrative structure and political will. Without power it is not possible to reach a decision." (transportation planner)

In fact, information which gained powerful meaning triggered action and supported it afterwards. It is information that acquired meaning and was largely debated that is presented below describing what that meant for the framing of the participants ideas.

Defining the problem

Professionals defined the problem in varied ways and some reformulated it when the *Barreiro* option appeared. When I asked the interviewees what was the issue to be solved they

gave me different answers. Some, while framing the problem, described the definition in legislation, congestion and the North-South connection:

> "X mentioned a Decree law that came out in January 1991, creating the GATTEL, describing the assumptions, the traffic congestion in the bridge and the need to find a solution to the connection North-South. The need to take into consideration the projects for the area and the limitations at the levels of land use and the environment level." (GATTEL member)
>
> "The legislation only refers to the need of a road bridge ... In the Decree Law creating the GATTEL there is a reference to the need to solve an urban problem and the need for an interregional crossing." (environmental NGO member)
>
> "A solution was sought for the congestion problem and a response to the regional and national connections." (GATTEL member)

For others, and these encompassed most of the professionals inquired, the issue was to solve congestion:

> "I remember that somewhere along the line the Minister of Public Works stated that the objective was to solve congestion in the existing bridge. The fundamental issue seemed to be to solve the congestion. The consultants were not asked for listing the problems to establish priority criteria." (GATTEL consultant)
>
> "It was necessary to solve the congestion in the 25th of April Bridge." (GATTEL consultant)
>
> "The problem the bridge should solve is congestion" (transportation planner)
>
> "The problem is essentially the problem of interconnection of the commuting traffic between the two banks, as for satellite towns." (PROTAML team member)

The perception that congestion was the problem at stake was because professionals saw congestion as a long lasting issue tending to become worse:

> "I always defended that this bridge should be an urban and suburban bridge, i.e., for urban and suburban traffic, to decongest the 25th of April Bridge, because even if public transportation improves, the amount of individual transportation in the crossing of the Tagus will last for a long time yet, while there are no drastic restrictions the use of individual transportation in the town of Lisbon. We have now in the Southern bank 280 to 300 vehicles per 1,000 inhabitants, it may even attain 500 in some places. In central Europe it is already around 500 per 1,000 inhabitants. It is expected that Portugal will come closer to these values. In fact, in 1970 the value was 70 vehicles for 1,000 inhabitants and today it is 280. This rate cannot be kept. Actually, it slowed down from last year to this year. Anyway, individual car ownership will be growing. It is a problem of congestion. Even reducing to one half the car utilization rate, since it is expected that in a period of 10 to 15 years the number of cars double, the present situation is going to repeat — 14 km lines in the morning — and more than one hour to overcome 2 km." (transportation planner and municipal consultant)

Lisbon is seen as a town with serious mobility constraints. Professionals feel a strong need to ameliorate traffic congestion. The whole issue of the bridge grew in urgency with the traffic congestion in the existing bridge. Most of the interviewees stated that the new bridge was to solve congestion.

> <u>Lisbon is hell</u>
>
> "Lisbon is hell and people get used to that hell which is awful." (Environmental NGO member)

While defining the problem as congestion professionals were assuming that the North-South national crossing would be assured in *Carregado*, as expressed in the interviews. This is

obvious in the statement of one of the interviewees dismissing even the possibility for some of the other options:

> "The new national crossing is by road mode. The PROTAML assumed the proposal of the National Road Plan of 1985/86 developed by National Road Authority (JAE), though we make suggestions on the phasing. (Initially) we did not expect the (national) crossing in Lisbon but in *Carregado.*" (PROTAML team member)
>
> "*Carregado* would be a perfect national crossing, the other is going to be questioned ... It would be not possible. The national crossing was solved by *Carregado.*" (PROTAML team member)

The assumption by some specialists that the national North-South connection was assured by the proposal defined for *Carregado* in the National Road Plan, gained greater strength when they found out, from a traffic study done within the GATTEL, that the national traffic crossing the 25th of April Bridge was 4% (as stated in the traffic study never exposed publicly except for some of the findings that were disclosed mainly in the media). This value was considered by the specialists as minimal to justify that connection as the higher priority objective. For a group of the specialists involved, solving the congestion of the existing bridge assumed a higher priority.

> "The creation of the GATTEL is made under the wrong assumption of making a new bridge crossing ... The North South connection is in *Carregado*...The North-South (national) traffic is about 4% in the 25th of April Bridge ... the problem that the GATTEL should be given to address is how to improve the situation: solve the congestion in the present bridge and avoid dumping cars into Lisbon." (environmental NGO member)
>
> "The problem that the bridge should solve is congestion ... The North-South traffic is minimal (about 4%) and therefore it has no meaning." (GATTEL member)
>
> "For that it is proposed for the last 15 years the crossing in *Carregado*, an easier connection between the North and the South of the country. From *Marateca*, if we go always straight, we get to *Carregado*, an excellent connection of North-South traffic, besides it is there that the traffic is. Only 4% of that traffic crosses the 25th of April Bridge. Plus, 40% of the traffic in this bridge is originated in the *Almada* municipality, with the traffic from the *Seixal* municipality it adds up to 75%." (transportation planner and municipal consultant)

This evidence influenced people's views and a need to reframe the problem was felt. One professional, justifying the issues at stake, explained:

> "The issue is if I want to increase the capacity where it already exists or if I am going to take advantage from the need to increase the capacity to diversify points of development, favoring in terms of diversity and centrality other areas, not the ones where accessibility already exists." (transportation planner and municipal consultant)

It is the appearance of the unexpected alternative which brought new possibilities back to the table, as an unfinished debate about the wished model of development for the Lisbon metropolitan area. Moreover, it is the 4% traffic share of national North-South traffic in the 25th of April Bridge and the integration of the urban component that bring to the debate further factors, one of them the train crossing:

> "In the view of the GEOTA the urban problem is more urgent than the regional. Actually only 4% of the North-South traffic uses the 25th of April Bridge. That puts an urgency in the crossing of a train in the actual bridge." (environmental NGO member)
>
> "We are forgetting the essential: or connect the North and the South by train, as well as (to make) the connection to the trans-European network with (already) assumed promises." (environmental NGO member)

Professionals saw the train crossing as a way to avoid cars in Lisbon. The possibility of just a train crossing was enthusiastically argued by some specialists eager to avoid the entrance of more cars in Lisbon, one of the causes of existing congestion.

> "On the other hand the train is less expensive (for the users) and does not bring cars to Lisbon, creating an alternative." (environmental NGO member)

> "We bet that in transportation terms priority should be given to the train mode, because the modal partition has to favor the train public transportation. In a context of high road offer the train supply mode should be created." (PROTAML team member)

During the debate, the 4% of North-South traffic crossing the existing bridge is going to play a crucial role in the justification for the location of the new bridge. Solving the congestion in the existing bridge assumes higher priority and consequently leads to defending the *Barreiro* option.

> "According to the traffic data of the GATTEL the solution points to *Barreiro.*" (PROTAML team member)

Professionals tried to explain why the Minister of Public Works did not incorporate this new information in the decision. Some saw it as a problem to be addressed and felt the need to hierarchize the two objectives stated in the legislation. They thought the Minister should be asked to define the priority.

> "Nobody remembered to ask the Minister at the initial stage what he wanted." (GATTEL consultant)

Others felt the incompatibility to handle both objectives by the same single solution, and considered the Minister option as not solving any of them:

> "The North-South connection in simultaneous with the solving of congestion is a wish of the Minister (of Public Works). If I have here congestion and there the North-South connection than I make a bridge in the middle and solve both. Only these things are not solved exactly on the base of geometry. After making the traffic studies the conclusion reached was that the bridge in *Montijo* does not solve neither the urban nor the national crossing." (transportation planner and municipal consultant)

Some felt confused with what was at stake and began questioning if the problem to be addressed was congestion, as one interviewee stated:

> "After a certain point it was not clear to me that the problem to be solved was congestion." (GATTEL consultant)

Others questioned the need for a bridge

> "Changing points: the big change of opinion is when they reached the point of questioning the need for a new bridge. This situation was reached very late but before the Resolution of the Council of Ministers." (environmental NGO member)

Though traffic congestion was frequently used as a powerful image, the adopted alternative (the one chosen by the Minister) is peripheral to the urban area. Therefore, it is not considered by some of the professionals as the best solution for diverting traffic from the existing bridge. To justify it professionals put this alternative in the light of the preferred model of development for the metropolitan area.

Urban planners vs. traffic engineers

"This was the vision of the urbanists. The defense of the *Montijo* (crossing) was never in terms of traffic, but always of an ideal of development which considered the establishment a new *Almada* in the other extreme of the Peninsula of *Setúbal*. It was the model of a triangle — *Almada, Setúbal* ... with the other vertex missing, which has to be in the East, and that is *Montijo*. It is this logic that shows up in the PIDDS, developed by the coordinator and with the support of people connected to the communist party. Therefore, in accordance with the urbanism of the East, voluntarist, based on the poles of development." (municipal technician and transportation planner).

Connecting urban to rural areas

One of the most important concerns among professionals was the consequences of connecting an urban area to the rural countryside. They saw it as a contribution for future chaotic development and urban sprawl.

One environmentalist explained that we should not damage the 800 years of rural balance:

"In our reality it is very important to be aware that we have an 800 years old rural space — which achieved the balance of experience." (Environmental NGO member)

The fact that the Southern bank was a mixture of urban and rural lands is considered by professionals to be important:

"In the Southern bank there is a waterfront arch between *Montijo* and *Almada* — an urban continua — oscillating between semi rural fields and the full urban areas." (transportation planner)

Due to the rural characteristics of *Alcochete* and *Montijo,* a South resident with his roots in *Alcochete*, saw a bridge in *Montijo* as a potential for future changes:

Montijo bridge affects rural/natural features

"I am sensitive to the environment. My father's family is from *Alcochete*. For me a bridge in *Montijo* will never be the most advisable due to the environmental impacts. The development is going to alter the characteristics of the area. *Alcochete* and *Montijo* do not have so serious social problems as *Barreiro*, where there are high levels of unemployment, since the disappearance of the work posts of Quimigal — about 15,000 work posts for a local population of 30,000." (NGO member)

He implied that the local population was not aware of the possible future development effects due to the bridge construction.

"The population (of *Alcochete* and *Barreiro*) is traditionally originated from *Ribatejo*. They love the land, the countryside and the bulls." (NGO member)

He considered himself as isolated among his peers, who saw the bridge as an opportunity:

Turning position into a personal matter

"When I run into people (from *Alcochete* and *Montijo*) they say "if you take us the bridge (in *Montijo*) I will never speak to you again." (NGO member)

Bridge as an opportunity

Some of the interviewees statements show that the populations living in more rural areas of the AML are eager to have the bridge close by. This means the abandonment of their

metropolitan area peripheral status. They see increased accessibility as a way to become part of the AML. This is evident in the following statements:

Montijo bridge as a promotion

"*Montijo* sees the bridge on its grounds as a promotion." (GATTEL consultant)

Bridge as an opportunity

"If that (the central alternative) were accompanied with an improvement of accessibility to all this (*Montijo*) area and the capital. But, as you know, it does not happen if we do not grab the opportunity and at this moment the opportunity is the bridge (in *Montijo*)." (municipal technician)

The bridge was seen as a means of progress by some, and was contested by others. The issue becomes controversial.

Growth seen as progress

The willingness to have progress is here contested by one of the interviewees, who refers to a false idea of progress:

False idea of progress

"The other important issue is the "false idea of progress" brought along — a growth without limitation, the interest in producing products, the destruction of cultural diversification. The urban expansion is carried on because the rural value is destructed in the behalf of the monoculture. There is an interesting thing. The progress is badly interpreted. There is a symbology of the progress and it is that what the populations have in their heads ... high rise buildings with 7 to 8 floors in rural areas. Progress is associated with roads, big highways, big dimensions." (environmental NGO member)

While others saw growth as a positive effect:

Bridge as a factor of population growth

"*Alcochete* is going to be affected negatively ... *Montijo* is going to duplicate the population." (municipal technician)

One bank or two banks town

The diverging points of view that were illustrated result from larger amounts of information circulating and a larger number of options on the table brought the need to reformulate the problem. Some professionals explained that before the decision people should have agreed on what type of town they wanted. This was to be known as a "one bank" or a "two banks" town.

Urban planners looked at the region as an urban area in need of an integrated solution. The crucial decision was focused between a "one bank" or a "two banks" metropolitan area. Many considered the latter as the right option and defended the central alternative, implying that the area had to work as a whole through the creation of a continuous reticular space between the two banks, merging areas of considerable development. Additionally, the South connection in

the declining region of *Barreiro* would contribute to the possible recovery of this area and the impact of development could be considered negligible.

So, urban planners concerned with the *modus operandi* of the urban area considered that the crucial decision was between a "one bank metropolis" or a "two banks metropolis."

> "To make a decision on the location of the bridge it is essential to discuss and reach a consensus on a key issue: if the town is going to be a two banks town, and therefore the strategies should aim to the improvement of interaction between the two banks, through tunnels, bridges etc., or if each one of the banks should develop more or less independently, assuming distinct and different functions." (transportation planner)

Two generations of planners -- two models of development

The two urban models of development defended reflect the views of two generations of planners: one generation bases the decentralization of the urban space on the creation of controlled poles of development, and the new generation embraces the new concepts of sustainable development, taking into consideration the areas already infrastructured and in search for development.

> "There were discussions, but I think that the positions became extreme very early in the process, because they represent completely different logics. The persons with a perspective of urban and regional planning divided into two positions, according to the generation they belong to." (municipal technician and transportation planner)

> "The older people, formed in the planning style of the 60's, think that the bridge in *Montijo* is a great opportunity to create a new town there and decompress the Metropolitan Area. It is the philosophy of *St. André* relative to *Sines*, of the old plans of the Housing Development Fund[219], to create towns to decompress, the theory of poles of development." (municipal technician and transportation planner)

Impossibility of accomplishing two simultaneous mega projects

One professional explained that the construction of a new town required a strong centralized power, and the resources to carry out a new town project. He also stated that he did not think we had either of these conditions. Explaining why he did not believe that there was the possibility to make another town in the South as a pole of development to decompress Lisbon, he referred to the difficulty in financing two huge projects simultaneously: a big town for decompression of the Metropolitan Area in the South and the Expo 98.

> "On the other side, let's not forget that at that time the Expo 98 became part of the agendas, and no matter what would happen it was also going to be a strong investment. It is not possible to imagine that it two Expos can be made at the same time. In practice it was a little bit of this that was going on." (municipal technician and transportation planner)

Closing the ring

It is the one bank town model that is supported by traffic engineers eager to close the ring (one of the circulars of Lisbon). It is important to stress here the institutional "personality" of

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[219] FFH, Fundo de Fomento da Habitação.

the JAE[220] that somehow represents the traffic engineers views cherished by the Public Works Minister. Looking at their traditional operation, we find that their main objective is the shortest, less costly connection between two points (urban areas) and preferably with no ramifications along the way. Their preferred solution pointed to a connection North-South in *Carregado*, well away from Lisbon. Along the process, *Montijo* was the favored option for the Tagus estuary crossing.

The National Highway Authority (JAE) is an important stakeholder in decisions that concern transportation. This is obvious in the statements of several specialists interviewed:

JAE Paradigm

"The Highway Authority (JAE) is a state inside the state and therefore does not want to talk with anyone else. This is the military spirit that characterizes the Highway Authority, managed by people from the army ranks (Corps of Engineers) until very recently." (municipal technician and transportation planner)

"The central corridor had many things besides a plain road structure, therefore it is the worse thing to ask the Highway Authority." (municipal technician and transportation planner)

"For the JAE it (*Montijo*) was obvious because it was in the initial proposal. They did not want to know about studies and evaluations." (GATTEL consultant)

"the JAE lacks decision power, nobody (inside it) wants to define himself." (GATTEL consultant)

On similar grounds stood the option advanced by a consultant responsible for advising the Minister who claimed that a throughway to serve a metropolitan area has to be as peripheral as possible, and thus defended the East alternative.

In summary: two views appeared in conflict, one preferring a thoroughfare — the urban planner choice associated with looking at the region as an urban functional space and considering its crossing as a way of reinforcing the metropolitan area and striving to give it more cohesion as a whole —, the other preferring a circular flow — the traffic engineers and JAE stand having in mind favoring traffic tangential to the urban area and defending a connection as peripheral as possible. These are two solutions associated with distinct conceptual frameworks of the involved actors.

Close the ring

"The traffic engineers rationale was to close the ring." (transportation planner)

The closing of the ring was associated with the view of an expanding city. However, recent data showed that this trend is being slowed down.

Static *vs* dynamic model

Recent data on the changing trends in population, employment and traffic (Census of the Population, 1991) provide evidence of a decline of central urban areas and a displacement of residents to the neighboring municipalities, leading to the consideration of a central connection

220 JAE - *Junta Autónoma das Estradas* - National Highway Authority.

as an instrument of revitalization of the urban space, instead of a reinforcement of the expansion at the boundaries of the urban core.

It is obvious from the above arguments that a considerable debate supported the discussions on the location of the new bridge. This appears as a complex issue allowing for different alternatives according to the objectives and points of view of the actors involved. It is the incorporation of a dynamic image of Lisbon that brings once more an additional evidence in changing trends which influenced changes in opinion of the participants.

After making some general points:

- "Lisbon has an (urban) unqualified East area." (GATTEL member)

- "The Lisbon municipal plan indicates as possible areas of development the East area." (GATTEL member)

- "Lisbon inverted its demographic trends and lost population, so that it is necessary to attract population." (GATTEL member)

one of the specialists concluded:

"Considering this the central corridor was the one that allowed for rebalancing the area." (GATTEL member)

Another one viewed the situation as follows:

"The periphery of Lisbon has been desertifying for offices. Separated from the interland, a circular sub urban area developed and (urban) chaos has been spreading." (Environmental NGO member)

"Knowing that population has been decreasing and many people in the AML are aged, the eagerness for further development seems inappropriate." (NGO member)

Geometry

Professionals looking into the town land uses and transportation links are usually very concerned with the geometry. Where are people located, where are the more densely populated areas? Where are the transportation links? They are interested in the spatial geometry and often use it as a supporting argument for their explanations. In fact, geometry played a role in this case while discussing the type of location decisions:

"The connection North-South simultaneously with the solution of congestion is an utopia of the Minister (of Public Works). He thought if I have here congestion and there the North-South crossing, I make a bridge in the middle and solve two problems. Only, these things are not solved exactly on the base of geometry." (transportation planner and municipal consultant)

"Land use has also a great amount of mathematics and geometry. This territory is uncentered physically and socially. I think that this should be reversed and some others think it should be reinforced." (GATTEL member)

"Some see the problems almost geometrically. For example, a well recognized planner divided the AML in two distinct areas, vertically divided by *Seixal*, to defend that any bridge had to be located towards the East to serve the local existing population because there was the higher percentage of the population." (GATTEL member)

Need to contain development

The need to contain development and avoid sprawl is a permanent concern brought by the growing acceptance of sustainability concepts. Environmentalists and environmental concerned planners, willing to preserve natural resources, condemned the eagerness to create new fronts of development. One interviewee complained about the indiscriminate opening of new fronts everywhere:

Current Planning on the basis of opening new fronts

"At this moment, planning is done opening development fronts. *Chiado*, Expo 98, Waterfront. The Waterfront aims to expand the town towards the Tagus, not connected to it. The only thing they can think about is producing housing and offices ... enough to lodge 5 to 6 million inhabitants." (environmental NGO member)

Avoid new fronts

"*Montijo* is out of all this. With the highway to *Cascais* and the highway to *Loures*, new fronts of development are open for a period already declining (demographically). With so many fronts (already) open, the opening of new fronts is undesirable. In the Peninsula (of *Setúbal*) we have already highly unqualified space. Therefore it is necessary to qualify what we already have." (urban planner)

False idea of urban congestion

One of the ideas brought to the table during the debate was that containing development can be done by intensifying the use of land or by the possibility of occupying empty spaces within the urban tissue. A professional, member the team of the PROTAML, explained:

Reknitting the urban tissue

"The Land Use model reached by the PROTAML team was one to avoid the continuous and disorderly expansion of the territory and to reconcentrate the occupied land, reknit the tissue and restructure the occupied land. There is no need for expansion. It is necessary to use the already occupied space" (PROTAML team member)

Unoccupied backyards

"This goes against our urban planners who consider that the whole space is very congested. They confuse lack of organization with high rate of occupation, which in real terms does not exist. Inside Lisbon the backyards are unoccupied. These are areas to order and occupy." (PROTAML team member)

The idea was to spoil what is already spoiled. Reknitting the urban tissue assumed great relevancy. One of the specialists interviewed described how the informed professional community got to the idea that there was room within the urban space for further occupation and how for a while they lived on false assumptions of needed space for development.

"On the other side (Southern bank) professionals, due to several reasons, either because they worked in the PROTAML or in the Municipal Plans where these problems came forward, knew well several municipalities of the Metropolitan Area of Lisbon, had made some easy computations of what is already compromised to urban use and figured out that it is enough to the double of the present population. Therefore, there is no need to open new fronts (of development). What is needed is to channel all the investment to consolidate what is now occupied and to improve environmental quality of those areas. Otherwise, we are going to have numerous holes not filled up. We are going to have unfinished streets, unbuilt plots. Let's occupy to the maximum what exists today, resew the urban tissue ... instead of opting for a megalomania that needs enormous powers to move." (municipal technician and transportation planner).

Resewing the urban tissue

"The land use model that our team (PROTAML) developed was to avoid the continuous disordered urban expansion, and to make a reconcentration of occupation of the land, resew the urban tissue, and reorganize the already occupied space. There is no need of expansion. It is necessary to use the space already developed. It goes against the urbanists ideas, because they consider that everything is highly congested. They confuse disorganized development with high level of occupation, which does not exist in real terms. Inside Lisbon the backyards are disordered areas, areas to be organized and occupied." (PROTAML team member)

These ideas were extremely appealing to the environmentalists who were eager to preserve the natural resources.

High environmental value of the AML

In fact, the environmentalists ended up being sympathizers with the urban planners solutions, but motivated by different concerns. The East solution was in environmental terms the one considered to have greater environmental adverse effects, both in the short and long ranges. In fact, that connection would be linked to a rural area through a space of high environmental value, classified at the EU level, besides it was close to the existing Natural Reserve of the Tagus Estuary. These facts, plus the potential for future urban development pressuring highly sensitive areas, made for the position of environmental concerned individuals against the adoption of the East connection. The following statements reflect the environmental rationale assumed during this process.

Natural Reserve of the Tagus is of European Importance

"The Natural Reserve of the Tagus Estuary is one of the 10 most important European wetlands." (environmental NGO member)

International Environmental Law ignored

"The construction of the new bridge is against two international conventions: the Genebra convention ... and the Ramsar convention which protects the wetlands." (environmental NGO member)

Landscape is one of the richest in Europe

"In landscape terms, it is one of the richest areas of Europe and people get used to live with it, to have the *Flamingos* very close and the *campinos* and salt marsh." (NGO member and Southern resident)

Structuring role of the transportation infrastructures

An important underlying concept in the debate, particularly when issues of increased accessibility were raised with the creation of the *Barreiro* option, was the powerful structuring effects of the transportation network. The structuring effect of transportation infrastructures is well present in the references made about the organization of the territory. However, only one interviewee specifically mentioned it clearly establishing the link:

"It is the accessibility that shapes spatially the land use. The land use management of the urban planners fails ... It is the heavy infrastructure network based in the market that makes the land use: the CRIL, for example, has a considerable effect in the land use." (GATTEL member)

Though only one person made clearly the connection of the transportation and the land uses most of the comments have this ingrained as an assumption in the proposed explanation.

Bridge as a tool of recovery

It is because of this structuring effect due to increases of accessibility that *Barreiro* begins to be seen as a tool for recovery. The option in *Barreiro* emerged out as a new innovative possibility which gained adepts along the process. One of the strongest images created was this possible bridge seen as a tool for recovery due to its contribution to increase accessibility to the area, as it can be drawn from several statements of the interviewees.

"*Barreiro* is a municipality that has seen the production of its heavy industry decline ... It has a very important commercial center. For example, it has two Benneton shops. This center, if connected to the core of Lisbon, could operate as an extension of the Lisbon downtown commercial center. Recently, it (*Barreiro*) is more and more a suburb of Lisbon." (transportation planner)

"The bridge is seen as a tool of recovery" (environmental NGO member)

"*Barreiro* is dying. The central corridor would allow for the urban recovery, of an area in strong depression and with gradually less potential to attract interests. Not providing accessibility to it (*Barreiro*) is only going to make the situation worse." (urban planner)

Questioned why the bridge in *Barreiro* would generate urban requalification, the same specialist provided a further explanation, saying that it was

"not the infrastructure but the accessibility that it generated." (GATTEL member)

"The problem that the bridge should address is the revitalization of the declining areas, since *Barreiro* already has adequate infrastructures." (environmental NGO member)

While creating accessibility to the area, the central functions of *Barreiro* could become a continua of the same functions in the central city of Lisbon.

Potential of *Barreiro* to become a central area

This was defended by one local technician who stated:

"In the urban hierarchy, in the South bank, the *Barreiro* can with *Almada* assume an important role of central area." (municipal technician)

"All the strategy of the PDM is developed in that direction, reinforcing the centrality that it (*Barreiro*) already has, in the urban hierarchy established to the South bank. The (*Barreiro*) bridge reinforces the *Barreiro* centrality. That centrality would be reinforced in the context of the remaining municipalities of the South bank ... polarizing the area, and *Moita* and *Seixal*." (municipal technician).

These specialists showed a strong notion of opportunity, taking advantage of the present profile of the area and their knowledge of the region and its trends. In this view, *Barreiro* could become a neighborhood of Lisbon. One specialist stated the advantages of this option:

Barreiro, a neighborhood of Lisbon

"It would relate the train connection with the associated socio-economic group. It would bring to the center of Lisbon an area which is already urban and it would make possible its rehabilitation in urban terms, making *Barreiro* a neighborhood of Lisbon." (environmental NGO member)

"The bridge in *Barreiro* could make this town become closer to the center of Lisbon through increased (the central pathway) accessibility." (environmental NGO member)

Lack of transversal connections

Professionals understood the difficulties of transversal mobility along each one of the two banks due to different factors. Difficulties at the level of transversal transportation connections either the deep valleys perpendicular to the river banks in the North bank, or the numerous peninsulas and bays in the South, provided a powerful image for the specialists working in the region.

Physiographic restrictions

"This area is like a hand; in the Southern bank there are a kind of three fingers (peninsulas)." (GATTEL member)

Professionals are still concerned with these difficulties and new ways have been proposed to overcome it. Among the proposals are the waterfront arch in the South. The location of the bridge was also seen in that light.

Moving from a spinal to a radiocentric grid structure

The connection to the existing transportation infrastructures and the gridline, radiocentric and spinal transportation structures molded the minds of the specialists dealing with transportation issues in the region. After referring to the information on transportation in the Master Plan of Lisbon and the new proposal to reorganize the transportation system one technician explained:

"Therefore, the goal is to pass from a structure in spine to a gridline radiocentric structure." (municipal technician and transportation planner).

This became important for arguing in favor of the *Barreiro* option. This was the solution that better fitted this option because it represented a deconcentration of the transportation axes of Lisbon which has been designed as a spine structure with collateral arteries hanging on it. The new proposal favored an expansion of activities to the sides to be enhanced by overlaying a grid of transportation lines facilitating the transversal mobility.

Lack of articulation

Some people considered that most of the public decisions were made within a specific sector with little or no link to other related issues. What they say is that there frequently is a tendency to look into these interconnected issues under an exclusively transportation or urbanist approach and neglecting the interdependencies of the decisions of one sector with the others.

Sectored View

"Transportation and circulation was the only concern. Well observed, but being only a sectorial view of the reality." (environmental NGO member)

"Planning is done with sectorial visions without any knowledge about other people's sectors. For example transportation planning and circulation being handled without any knowledge about the agriculture sector, urbanism being developed without any knowledge about other sectors. There was a sectorial vision." (environmental NGO member)

One interviewee explained that as a lack of a culture of coordination.

No coordination culture

"I already participated in a project of big dimensions: the ETRL, (it was) more towards the management of transportation, not so much the interfaces. We do not have a culture of coordination. Already in the ETRL, at the planning level of the 60's and 70's there was a high multidisciplinarity, a dialogue between different professions. Technicians from the Lausanne school came. In the 70's and 80's the ETRL was not implemented ... The process of political coordination itself stayed so bad that this tool was not viable." (PROTAML team member)

Defending the location at *Montijo*

Supporters of the *Montijo* solution, also used information as a basis for their position. Here are some examples:

The *Barreiro* bridge seen as an extension of the 25th of April Bridge

"The *Barreiro* corridor is not a new crossing. It is an extension of the existing bridge. What Lisbon needs is not more traffic, but that the traffic gets more distributed and does not pass through the center." (municipal official in favor of *Montijo* / NGO member)

Minimizing the population growth impact

"The *Barreiro* corridor, being a solution for decongestion in the immediate future, is going (in the far future) to increase congestion and accentuate the asymmetry, maintaining the present situation. An investment of this dimension has the potential for structuring the area. In theory there is the risk to spoil everything, but it is not exactly like this. The population gets distributed slowly, besides there are planning elements. The expected 12 to 14 thousand inhabitants increase is nothing compared with the 180 thousand (inhabitants) of *Almada* and *Barreiro*." (municipal official in favor of *Montijo* / NGO member)

What matters is quality not quantity

"The problem is not to have too many people, too many houses, but to have lots of people and houses without infrastructures. In the 60s it was important to make lots of buildings. Today it is different. The error then made allowed us today to have experience and concrete examples. The problem is not to have lots of high rising buildings, but to insert them well." (municipal official in favor of *Montijo* / NGO member)

In summary, the information generated within the discussion of the new estuary crossing location gained a powerfull meaning, particularly whithin the technical community. This is well reflected in the way people expressed their views on the subject.

The key information that contributed to the recommendation of the new crossing location includes:

- updated data showing decreasing demographic trends convinced professionals of the declining demand on land development;
- evidence of the origin-destination traffic study showing low levels of traffic capture in the *Montijo* option that reinforced the idea that congestion was not going to be solved by this option;
- new environmental concerns that led to the reformulation of urban development models towards more sustainable cities, contradicting solutions of town saturation based on opening new fronts of development;
- view of the central corridor option as a recovery tool of two declining areas, *Chelas* in the North and *Barreiro* in the South, providing a simultaneous solution to two serious urban problems.

The technical community, although initially suprised, accepted the evidence offered in support of the central corridor. There was a general acceptance of the new option. The participation in various debates, organized by professional associations, research institutes and even the GATTEL, gave to a wider technical community the opportunity of exploring this new option and led the new meaning inside this group.

However, a problem arose when the new proposed solution was not accepted by (part of) the central administration, a body working under clearly defined bureaucratic rules and handling changes with difficulty. Such an organization cannot easily alter its own way of seeing a problem, particularly when the new proposed alternative had never been considered before and, therefore, did not become part of the political agendas. Though the technical advice favored the newly created option, something prevented this administration to adopt the proposed solution.

INCOMPLETE INFORMATION AND MISSING INFORMATION

Although a lot of information was used and discussed during the process, several players identified information which was not used or was only partially used.

> "There were things that were not approached." (politician)
>
> "There is technical information that was not integrated." (municipal technician and transportation planner)

One respondent considered that the knowledge available for the Northern bank was greater than for the Southern bank, stating:

> Less information available for the South bank
>
> "I always felt that there was much more information on the North than on the South, much more plans, much more knowledge of reality. Most of the people involved lived in the North side and there was new information on the North bank. The information about the North was more digested by people." (Southern municipal technician)

One of the interviewees identified information rarely considered in environmental debates:

> Air and noise polution in an urban *vs* a rural area
>
> "In local terms the emissions in *Barreiro* would have increased if the bridge were located there, and would be three times higher than in *Montijo*, according to the traffic calculations. The North insertion in *Sacavém* also presented problems (passing over two schools and at the second and third level of buildings)." (environmental NGO member)

> There were several pieces of information that participants identified as missing
>
> "The three corridors emerged without discussion at the level of the urban issues. Only raised the issues related to land use were raised." (GATTEL member)
>
> "The intermunicipal issue (more than one entity) was not approached, particularly in what concerns the intermunicipal interaction. It was not given the importance it deserved." (Southern municipal technician)

However, some of this information was used, though not in the view of most people because it did not show in the reports or for the final decision of the Minister. One of the interviewees identified information which in his view was not used, but was discussed in meetings, he stated:

> Information not considered, but sometimes discussed in meetings
>
> "(1) it is impossible to reverse development in terms of the work market, as it is usual to live in the South and work in the North; the hypothesis of the municipalities to develop to the South is unreal because they do not provide accessibility needed to work;
>
> (2) it is impossible to look at Lisbon as Paris, a town of two banks with a system of bridges;
>
> (3) there is an interesting argument advanced by a transportation specialist in LNEC that considers an estimate of fluxes across the river equal to the present fluxes in Lisbon and finds out that for that there is a need of one bridge every 500 meters (along the river)."
> (GATTEL consultant)

Some information was seen by the specialists as not used or only partially used. Part of this information turned into key issues at conflict stages, and was used differently by the different players willing to substantiate their positions. This was the case of the effects generated by the construction of the 25th of April Bridge:

Ignoring the impact of the 25th of April Bridge

"The impact evaluation of the 25th of April Bridge (was not considered). Among us nobody learns with the past, we depart always from zero." (GATTEL consultant)

"The dossier of the old bridge was completly put on the grey zone." (politician)

The above comments came up when referring to the issue of the train crossing of the 25th of April Bridge and once more have implicit the idea that specialists did not use information that already existed.

A set of interviewees also identified lack of access to information, particularly at the public debate level. This was the case of the economic dossiers related to construction costs, one of the pieces of information that gained great visibility in the debate.

Inadequate information on construction costs

"Things that did not enter... I think that in the pubic debate what is relevant and did not enter into consideration were the economic dossiers. This is still a hole today. I (myself) had never access to the economic dossiers. Since I do not have access to the economic dossiers, (I assume) the access to economic information failed. About the remaining subjects, better or worse we are getting information." (politician)

"The information on the costs of the bridge was insufficient ... I think they have underevaluated (the cost of the *Montijo* option) and overevaluated the East alternative cost (i.e., the central corridor)."

"The costs ... They were manipulated in a way that was not serious. It was said that the cost of the *Montijo* option was 120 millions while the other (central corridor) would be 180 to 190 millions. The firm that won (the construction of the *Montijo* bridge) makes it for 200 millions. Although it is acceptable that the price is different, because with the pre-project it is possible to correct the price, what is less acceptable is that the increase is of practically 60%. That leads me to believe that the cost of *Montijo* was minimized ... but worse than that is to compare two uncomparable things. The cost of a road bridge in *Montijo* with that of a train-road bridge in *Barreiro*, in equal terms. Besides, the accesses were not considered." (municipal technician and transportation planner)

Specialists referred frequently to the final traffic study that was never publicly exposed, when they were justifying their positions. This was another piece of information that achieved substantial visibility during the controversy, as it can be seen by statements of interviewees:

Unavailability of the traffic fluxes study

"The final traffic study, considering the demand elasticities relative to the various ticket costs, in public transportation or in the bridges, was not considered, published, or diffused, because what the traffic study says is that this bridge cannot capture any (significant) traffic to the 25th of April Bridge. It can capture 20% of the traffic. However, there are certain values that came out on the news." (municipal technician and transportation planner).

"The input-output matrices never became public." (PROTAML team member)

"The information concerning the studies on fluxes of origin-destination traffic were made, but have been well kept." (urban planner)

"In what refers to the input-output study surveying (the traffic movement of) present users of the bridge, it was obvious (from the results) that the idea would be for the consolidation of the existing land use and not in opening new fronts ... The municipalities in the South are small and have a weak structure." (GATTEL consultant)

"the input-output matrices did never become public." (PROTAML team member)

"I never saw any traffic study." (politician)

"There is a study going on, sponsored by the World Bank, inquiring about the traffic North-South in a national perspective." (transportation specialist)

"According to some inquiries about the traffic in *Porto Alto* it was found that only 10% of that traffic was related to the North-South connection. Most of the remaining traffic always had to do with the Metropolitan Area of Lisbon (AML)." (transportation specialist)

The economic and traffic aspects assumed a crucial role in the process. However other type of information was identified by the interviewees as relevant, but not used, or only slightly approached.

Lack of the new exploration costs for the 25th of April Bridge

"The exploration of the 25th of April bridge and the costs of including in the same platform the train to *Algarve*, the train of goods and the suburban metro. How is it possible to explore in the same line the three things." (politician)

"The less debated dossier was the future of the 25th of April Bridge. This is also the most urgent and the most useful to the population of all (the dossiers) that exist today, and was the least debated." (politician)

Lack of the 25th of April Bridge structural reinforcement costs

"How much is going to cost the reinforcement of the 25th of April Bridge and how much is possible to explore it? Intuitively, I think it is not possible (to explore it with profit). It is not possible because it has different logics.

First, it is a crazy cost, because the cost to reinforce the bridge for the train with wagons is very high.

If the train has to brake, the movement is transfered to the whole bridge. Therefore, the bridge has to be reinforced to resist to it and that is not being done. The bridge was calculated for automobiles, which do not brake all at the same time, and for surface metro (light train).

The government decided not only to construct the *Montijo* (bridge), but also to put on the 25th of April Bridge the three (types) of trains. ... At this moment there is a serious problem. ... That is not technically possible and is not economically feasible. A tendering was opened for the construction of the (train) crossing in the 25th of April Bridge and the tendering had no applicants. Now they are going around. They do not have any solution. Solutions can always be found (but) it is going to cost a fortune." (politician)

Lack of priorities definition

"What is more important? The bridge in *Montijo*? ... What is the priority of the priorities? Is it the bridge in *Montijo* or the crossing, forseen since Salazar, of the suburban surface train in the 25th of April Bridge? It is the suburban crossing of the 25th of April Bridge. That does not depend of the bridge in *Montijo*, or *Barreiro* , or *Carregado*, or anywhere else. It could be done since the first

European Community Support Framework in connection with the metro network of Lisbon ... and it is not going to be in operation when the bridge in *Montijo* begins operating." (politician)

"The urgency is the rapid transportation in the existing bridge." (environmental NGO member)

Lack of information on the process

"At this moment I begin to doubt ... I am not sure if *Ferreira do Amaral* (Minister of Public Works) is not retarding the dossier of the 25th of April Bridge on purpose ... and for what? ... with the hope that one of the two is not going to be made? ... or the long distance train? ... But only the surface metro, as I said, was what should be done in the 25th of April Bridge. ... In the meantime someone is going to make in *Barreiro*, or *Carregado*, or in *Vila Franca de Xira* another train bridge ... I begin thinking that the foggy lack of information is suspicious ... The lack of definition of due dates ... about the train in the 25th of April Bridge ... which is the dossier that could advance independently of the decision of the train crossing of *Montijo*. It could have started. It has nothing to do one thing with the other. He (the Minister of Public Works) wanted to discuss them (the two issues) in the same Council of Ministers ... He wanted to put together the road crossing, the surface metro, and the solution of the problem that comes since *Fontes Pereira de Melo* from the XIX century, the train connection North-South." (politician)

PART 4

LESSONS OF THE CASE

WHAT THE NEW ALTERNATIVE BROUGHT UP

The unexpected alternative was developed during a period of intense restructuring policies for the metropolitan area catching everyone by surprise, even its later followers.

It had the effect to shake the people's frame of mind, which for long years was set up to accomodate the *Montijo* option as the natural follower of the 25th of April Bridge. Besides, most of these professionals were already working in plans, most of them already compromised with this alternative, making change even more difficult.

However, despite all these difficulties the unexpected alternative gained adepts who saw in it potential for new not previously perceived opportunities. These were brought up by an argumentation supported by concepts giving meaning to the strong links between transportation and land use. This was called by one technician of the GATTEL Planning Team "tools for land use and transportation evaluation."

It is the exploitation of the tight connection between transportation and land use that contributes to the development of new shared meaning. This process developed in the forums created within the GATTEL and also in the ones involving wider audiences — the politicians and technicians working for public agencies, namely municipality technicians and consultants.

Shared meaning became so powerful that, to some of the actors, it reshaped the way they thought and reframed the problem, generating new alternatives (e.g., environmental associations suggested the construction of only a train bridge in the central corridor).

DIFFERENT MODES OF OPERATION

Usually, "technical studies", are given to a team of professionals with specific field expertise to carry them on indoors. The whole process is developed under secrecy, mainly because the location of big infrastructures can generate considerable controversy and speculation, and governments generally want to avoid them. It is also true that these groups are most frequently dependent of one agency (e.g., a ministry).

For example, transportation plans, though attracting the attention of the agents operating in the metropolitan area, were mostly developed indoors, restricted to a team of transportation experts. Though these plans did not particularly influence the specialists from other areas of expertise, they framed the views and minds of the transportation planners, who showed familiarity and knowledge about these plans.

Moreover, the usual procedure of these groups is that their members carry on their work in their specific areas of expertise and at the end they glue the various contributions together with little or no attention to their articulation, besides some short summary conclusions, once more developed with their backs turned to each other.

Frequently, we end up with documents rich in gathered data, with little articulation and almost no interpretation of the data in meaningful ways that would be useful to the subject under consideration. However, they may sometimes serve the purpose of politically legitimizing a previously stated policy.

Definition of the problem and final decision are in the hands of the politicians. The experts only have to carry out the studies requested by the political setting within well defined strict boundaries and complying to established due dates.

This prevents these studies from having enough meaning, that can only be achieved by articulating the different pieces. One way to do this is through sitting all the team members at the same table and carrying on wide debate. This allows people to bring up their views, which are frequently shaped by their fields of expertise, and accounts for the possibility of merging the contributions of the various actors in a meaningful way.

The GATTEL Planning Team established a dynamic process that is quite unusual to these groups. Usually they operate under more rigid and bureaucratic rules. In fact, these types of governmentally mandated groups:

(1) are usually created to address a clear one solution task (e.g., design of a bridge) and not a "wicked problem" such as the location of a bridge;

(2) frequently involve one or very few consultants or a team drawn from and under the responsibility of only one public agency (e.g., as for the airport location), with strong loyalty ties to that agency; differently from an inter-ministerial pluridisciplinary team

involving the contribution of a large number of professionals and public officials who share their expertise during the process;

(3) most frequently the rules and procedures are clearly stated and accepted by the client and the consultant, in this case there were several aspects of operation that remained ambiguous since the beginning and along the process (the objectives, the procedures, the level of responsibility);

(4) usually the expertise is restricted to a very specific type (e.g., hard science in a geology study) not easily translated for wider technical communities; in this case the issue under consideration interested, and was challenged by, a great number of professionals (urban planners, transportation managers, environmentalists) and it dealt with issues that professionals from differentiated backgrounds could understand.

Unfortunately, group processes, as these are called, are a more time consuming effort. Usually the studies are directed to solve problems that should have been solved a long time ago. The usually tight schedules that these studies have to obey also prevent the adoption of such a course of action.

The other thing is that the problem is sometimes operational and straightforward, and it is not a "wicked problem"[221] that may require space for redefinition.

Location of a big infrastruture, particularly in a widely urbanized area, cannot be properly considered a one solution straighforward problem. The number of interests involved, the possible alternative locations, and even the possible considerations of "package deals" make it quite a complex issue.

The other unusual aspect of the GATTEL Planning Team was the very high amount of information gathered and structured during the process. Also, the debates and brainstorming sessions that were organized led to the development of a meaningful language that became powerful because it allowed for the articulation of concepts coming from different fields of expertise.

As one of the team members put it, the process involved a lot of experts from many different areas.

> "There was a pluridisciplinary team since the beginning and the issues were assessed against the various fields at the same time. As far as I know this is not very common ... I think that this had much to do with the people that were involved in the process."

The team members considered brainstorming very important. One of them said that "there were very special minds (brains) discussing", adding that the debates became so interesting that the Steering Committee members sometimes participated.

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221 Rittel and Weber.

The debates centered around "what we thought was good or bad and what we could do — this was to make us think." The GATTEL Planning Team debated "planning concepts that could be very different, but could be logically understood."

The GATTEL Planning Team:

(1) established a participatory process within a bureaucratic setting,

(2) was able to successfully coordinate the different groups operating, and

(3) created meaning through the articulation of concepts emerging out of different sectors.

The GATTEL was very innovative in several ways:

(1) the fact that it was a inter-ministerial group

(2) the financial and administrative autonomy, more in the way of a "private enterprise endeavor"

(3) the Planning Team, the methodology, the process (simultaneous contacts, informal network, debates involving outsiders, knowledge of the region, previous experience of work, knowledge of data sources), the articulation (meaning of data in the reports, development of new adapted images, bridge as economic tool for economic recovery), the technical acceptance (by a wide number of professionals, what they said about the studies, respect for different opinions).

INTERACTIVE PROCESSES AND NETWORKING

Important enough is the information used by the GATTEL Planning Team. When the GATTEL was created several studies were developed or were under way. The municipalities were developing their municipal plans. They were going through a joint reflection about the wanted future for the metropolitan area, and the PROTAML was under way. Transportation plans, such as the National Road Plan and the Train System Plan, were also setting structuring policies for the area. Any of these activities implied the collection and structuring of data relevant to the studies the team had on its hands.

An identification of the plans and public agencies producing information was the initial phase of a wide development of contacts (reaching to as many as 60 entities, as stated in a GATTEL report) with public agencies and consultants. The purpose of gathering the most updated information was twofold: to collect data covering the identified topics (land use, environment) and to involve consultants to give expert advice in areas crucial to the decision (e.g., ecology, geology).

Frequently, these contacts with professionals working in several agencies began by being informal and tentative. Some of them got formalized, whenever the need justified it. The collection of information was set up as a two way flux, meaning that information provided by an agency was structured and returned to the source with value added for this agency use. Besides the advantage of creating trust, this procedure was beneficial to both sides in very political terms.

One key source of information was still working on the data making difficult its accessibility — the Census of the Population of 1991. Some of the information was acquired in preliminary form and compared with other information for cross evaluation. Often, information that was not directly available was collected from surrogate sources, and worked to suit the needs.

The information gathered in this way was debated by the group or with other participants, consultants and other GATTEL members. These debates had the advantage of building up meaning for the information and of articulating the knowlege of different fields.

The information fluxes that were established, particularly with some consultants and municipal technicians and politicians, created informal forums that influenced the establishment of trust and credibility. These entities developed a key role in the process, being frequently responsible for the public use of information that might otherwise stay indoors within a restricted group. In this process of turning public issues that frequently stay indoors, the media was crucial to provide a space for debate.

The breaking of the consensus among the political and technical entities, with the unexpected alternative, increased the level of controversy. Positions were radicalized once the Ministry of Public Works preference was made public.

One of the groups showing greater opposition were the environmentalists. The need they felt to carry out studies and to defend their stand, encouraged them to work together in defining actions (e.g., meetings with public figures, media conferences, media statements), developing studies and exchanging information. Later on, a more expanded group including other environmental associations produced a joint publication on the location of the new bridge, giving their views on the issues and offering some proposals. Most of the information they used in all these activities was obtained in governmental studies (produced by public agencies). The GATTEL studies, particularly Documents 4 and 6, supported most of the environmental association analyses. Appreciations of the studies developed by the GATTEL Planning Team appear in the environmental associations joint publication[222] though reference is made to the lack of some information they considered vital .

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222 *Dossier Erros Históricos de Ambiente — A Nova Ponte Sobre o Tejo em Lisboa* , GEOTA, IDD, LPN, Quercus, 1994.

LACK OF TIME AND ROOM FOR REFRAMING THE PROBLEM

There were "difficulties in redefining the problem", as one of the interviewees stated. Initially the problem was set in legislation as being the need of a national and regional North-South connection and the solution of congestion in the 25th of April Bridge. When none of the alternatives gave a good answer to both problems a third alternative emerged, assuming congestion as the main priority and relegating the North-South connection to a second plan. At this point there was a need to redefine the problem. But the rigid bureaucracy was unable to readapt to change with the high speed needed for complying with the tight due dates that were set.

Plus, the redefinition of the problem is always difficult in a rational model setting more prone to an already accepted one solution problem. Furthermore, it is not an easy task for a bureaucratic structure to accept such change lightly. Moreover, the acceptance of change needs time, something that did not exist at this point.

When the unexpected alternative emerged, highly recognised experts operating for long in the area confessed that they had never thought of it. They had also operated in the area for a long time and were frequently involved in teams making projects, plans or studies for the area, accepting as a given fact a future bridge in *Montijo*.

Once the unexpected alternative was developed, and the connection between the bridge and the future image of Lisbon became powerful, people felt the need to reframe the problem. However, the process that had been set up, did not consider that possibility.

The tight deadlines, made this even more difficult due to the need to assure an increased amount of time to carry on the task.

The controversy grew inside and outside the government. The Ministry of Public Works pressured by the governmental agenda and, still adopting the top-down model of the 50's decided for the easiest choice, accepting the previous solution and saying that "bridges are not to stay in drawers."

Since mechanisms for participation are limited in Portugal, it was not until a 50% toll increase in the existing bridge to pay for the bridge to be constructed in *Montijo* was enforced that the location issue of the new bridge was unburied again. How much is connected to the location, how much is connected to the imposed cost, or the equity of the situation (since "there is no other toll bridge in the country") is still to be uncovered.

However, this conflict that began with peaceful "honking" next to the booths and grew to a one day blockage of the bridge, already costed the tax payers a 300 thousand contos media campaign, a revision on the bridge fares, popularity, and a special tow-truck that the

Portuguese Highway Authority had to buy in order to prepare for the possibility of a second blockage.

The return from summer vacation, with the new tolls being charged, brought again the expression of discontent through "honking", payment by check, payment with high bills or small coins, "car panes" in the booths, and forgotten wallets. Everything seemed to be a pretext to show public unacceptance of the government decision.

This is a lesson to be learned by all of us. It is time to understant that if participation is a commitement of the government, some processes have to be designed differently to avoid unecessary costs generated by the groups that feel unheard. Plus, it is proved in the literature and there is evidence here, that group processes have led to more innovative solutions and greater consensus, besides educating the participants.

GROUP PROCESSES

What happened in between that changed the course of events? Maybe the critical point was the setting up of group processes.

Possibly due to the extremely tight due dates and the dimension of the task they had in their hands, the methodology adopted by the GATTEL Planning Team had to be sped up in two ways. The methodology, itself resulting from a careful analysis of other cases (Svern, Normandy bridges) introduced an innovation shortening one of the project phases in order to make possible the execution of the task in the established schedule: instead of exhaustively analyzing all the possible alternatives, the initial phase would only consider possible corridors, like channels across the river, without analyzing detailed bridge locations. Each of these corridors had to have at least one feasible alternative. Secondly, data were sought simultaneously in several fronts. For this, several groups were created, as explained in the GATTEL documents, to collect needed information, while external consultants were hired to develop studies in several areas considered crucial. Frequently, these consultants sat with the GATTEL Planning Team and other GATTEL members arguing and debating about the information that was being collected and the issues that were being considered.

The environmental associations were also creating a small scale group process when they gathered together to develop joint actions and to share ideas, at the same time as they were optimizing resources. This led to markedly different strategies and forms of operation that enhanced their credibility among professionals and politicians. They also initiated judicial forms of action and learned to operate in the wider settings of international environmental NGOs and EU institutions.

LATE INVOLVEMENT OF STAKEHOLDERS

Most of the involvement was done at the public agencies or consultant level, leaving little or no room for general items and interest group organizations. These were just allowed to follow up the process through the media.

Starting in January 1991, the GATTEL developed the first report in April 1991 of that year. In February/March 1991 the decision of the Ministry of Public Works to construct the bridge in *Montijo* was publicly announced in the press. This choice was to be legitimized by the Council of Ministers only on July 1992. Between these two dates a flow of events took place filling in the news with opinions, positions and debates.

Once the building contract was prepared, the GATTEL openned a tendering for the construction (January 1993) and the winner was selected. After this, an Environmental Impact Study was developed and submitted to public consultation. In the 24th of March of 1995, the contract was signed with the consortium that won the construction contract and the bridge construction starts.

After the decision on the bridge conflict arised because of the chosen location, the evaluation of the EIS, and the Public Consultation procedure on the location. In the construction phase, conflict arose again, but this time under the accusation that the mitigation measures proposed in the EIS were not applied.

The media had an important role. The media coverage brought to public forums issues that frequently stay indoors, increasing the potential for public participation. However, some of the interviewees considered that part of the information brought up by the media was highly inaccurate.

Besides the high potential of the bridge to spatially reshape a whole metropolitan area, what makes this case so interesting is the public controversy generated over the solutions proposed and the amount of available information debated, changed and articulated during the whole process, by a large and wide group of participants.

Though congestion and the North-South connection were stated in legislation as the issues to be addressed by the GATTEL, several other issues emerged, namely environmental protection, the future urban development model for the metropolitan area of Lisbon, the cost, technical problems of bridge construction, improvement of quality of life, infrastructured land, train connection, location of the new airport.

This whole debate led, among other things, to innovative processes of informal organization to deal with the issue. This is important as Portugal is in an early stage of the participation process and therefore it is in a period of designing adequate forms of institutions to carry out these tasks.

The environmentalists considered the location of the bridge a crucial issue. In their words, "the construction in the East corridor will irreversibly damage the environment". Aware of their resource limitations and of the importance of such a decision, three environmental associations organized a joint team to carry out studies and collect information, and agreed on taking articulated action against the unwanted option.

Later on, a joint effort of environmental associations, but this time expanded to include other ecological groups, produced a written document on the effects of the bridge that they sent to several National Assembly politicians and distributed to the population in a community outreaching action.

SUMMARY OF KEY POINTS

This case reveals the difficulties of opening public decisions to wider constituencies. Difficulties in integrating the views of a wider constituency in the decision have often led to limitations in carrying out decisions, additional costs in solving conflicts, or even the impossibility of implementing the projects. Conflicts can develop because part of the actors are not heard or the necessary political acceptance is not assured. They may cause project implementation delays or even lead to the impossibility of accomplishing the project.

Conflicts such as the ones occurring in June 1994 in the 25th of April Bridge are an example of what can happen when there are difficulties in integrating the views of a wider constituency. People were demanding greater legitimacy and better justification of decisions as well as their involvement in the decision process.

Overall, the process generated a lot of information and explored new ways of operation. Here is a summary of key relevant elements.

Interactive processes -- development of forums

Debates held in meetings of local technicians and politicians, before and after the GATTEL creation, contributed to a pool of shared knowledge among a wide group of professionals. The richness of this pool of knowledge played an important role in the way the process developed.

The meetings held in the GATTEL, and later on in some municipalities, constitute the creation of new forums for debate, initiating a participative process unusual in this context, though mostly restricted to the technical sphere. Unfortunately, this initiative died too soon and had only limited implementation. It contributed, however, to create shared knowledge, though it did not effectively develop consensus.

The environmental associations also developed forums for debates among them, sometimes expanded to a wider technical and political community.

Shared knowledge

The meetings had an educational effect on the participants, mostly from the technical community, developed shared meanings that would later on influence the credibility of the GATTEL Planning Team, as stated by the interviewees, and developed new ways of seeing the problem.

Learning processes

Participants in the meetings went through a "learning process". The debated issues generated more knowledge and new understanding, and framed a consensual image for the town among the technical community.

The environmental associations revised their way of operation and got together to share scarce resources and to divide tasks. As one governmental specialist stated, "it was the bridge that united the environmental associations". For the first time the government was challenged in the National Administrative Court and complaints were filed in European Union instances.

The environmental NGOs learned how to move in the wider context of the European Union and how to become more strategically efficient. A trust network developed among them and with some of their international counterparts. They carried actions set up in joint discussions .

Informal networking

The meetings held with the wider technical community, and the ones held with the municipal politicians and technicans, established trust among participants that favored informal contacts keeping up a continuous feedback whenever necessary. A similar processes occured with the environmental associations.

Value added information

Informal networking provided relevant up dated data, frequently exchanged with the promise of some value added to it (e.g., that raw data received would be returned back already structured and analyzed).

Innovation in the methodology -- shortening the process

The development of a methodology fitting exceptionally tight due dates was considered a challenge by the GATTEL Planning Team. After this team analyzed the methodologies adopted in similar processes elsewhere it reached the conclusion that a new idea was necessary to shorten the study period. The methodology developed considers the study and selection of corridors, as pathways across the Tagus, before studying specific crossing alternatives. The definition of specific alternatives was to be done afterwards, only in the selected corridor(s),

allowing for a significant reduction in the number of alternative crossings to be studied in detail and, consequently, to a reduction in the time necessary for the study.

Recognition gained by technicians and environmentalists

The high intellectual level attained by the debates organized by the GATTEL Planning Team received the recognition of the Steering Committee elements who often sat in their meetings. This might be one of the reasons why nothing written in the technical reports was substantially changed before consulting with the members of the GPT, as confirmed in the interviews. The douments issued by the GATTEL Planning team were recognized of high quality by the professional community, some of whose members acknowledge using them as sources of information.

The environmental associations also gained credibility among politicians. They began to me more often consulted whenever a controversial environmental issue was at stake.

Meaningful technical reports

The substantial capacity of the GATTEL Planning Team to synthesize main aspects and to integrate the different sectors contributed to enhance the meaning of the technical reports. The most striking feature of these reports is that they were not merely descriptive, as frequently happens in this type of studies. They were interpretive, reporting on the implications of the different information analyzed. The several topics of the reports were articulated and made sense.

Articulating the political bureaucracy with the more interactive process

Until a certain point, the GATTEL Planning Team was successful in defining a working process that integrated a bureaucratic system with a more participative one. This was done by allowing the two processes to coexist independently, keeping them open to each other, and allowing for the opportunity to establish the link between both when the participants so wish. Something like keeping the door always open for cross participation between the two settings.

Though the methodology adopted was based in the logic of the rational instrumental model, defining specifically which areas belong to the decision level and which ones to the technical level, the process led by the GPT operated pretty much as a group process, stimulating a wider involvement.

In fact, the debates carried out by the GPT on a continuous basis were always open to other GATTEL members who frequently joined them. This does not necessarily mean that they shared the same views, but that they had the opportunity to be exposed to the debates. This practice might have also contributed to enhance the credibility of the GPT in the eyes of the higher level hierarchy.

This represented an important contribution to enhance the compatibility of operation of two types of entities (a bureaucratic and a more interactive one), but a further effort is still required to integrate in the process other organizations, such as interest associations, to assure the integration of the views of a wider constituency. The distinct rules and procedures of these institutions makes it rather difficult to render compatible their working together. A gap of communication between the two is present due to the difficulties of mutual understanding and their distinct modes of operation. A good example of this is the whole process developed by the environmental NGOs which complained of difficulties in integrating their views in the more bureaucratic public administration settings.

New information, new solutions

New information was produced in working papers, newspaper articles, joint publications of the NGOs. Part of it was available to public access. Information was challenged, used, transformed and new approaches were proposed (e.g., the only train bridge connection in the central corridor suggested by the environmental associations).

New organizations

Interest organizations (*Montijo* and *Alcochete* Association for Defense of the Quality of Life (AMA), 25th of April Bridge Users Association) emerged, due directly or indirectly to the issue under consideration. Some of them assumed expanded roles afterwards.

Learning with the case

I described several positive effects of the studied case, because I believe that the successes of the case teach us lessons for the future. Most people consider that this case was not different from other public decisions. I argue against it. I think this case was unique and constitutes an example of the paradigm shift from the representative towards the participative democracy in Portugal. As one of the interviewees stated, "this process was a good systematic revealer of the inadequacy of the merely representative decision process." It may be argued that the final decision on the location was political and ignored the technical information produced.

However, the process created an intellectual capital that gained the respect of the government and forced the bureaucratic administration to revise its modes of operation.

Vertical links missing

Horizontal communication links were most successfully established, but vertical links were missing (GATTEL - government; environmental associations - GATTEL Steering Committee - central government, municipalities - GATTEL). Furthermore, weak links among the ministries may have resulted from the perceived hierarchy existing in our public system.

Lack of a consensual problem definition

The ambiguity in the way the problem was defined and the never established hierarchy of the objectives left substantial room for each actors to define the issue according to their interests and views.

This process involved mostly professionals, leaving out the common citizens, who felt neglected and ignored by the government. Professionals, though interacting actively, felt that their technical advice was ignored by the central administration. Maybe this can partially explain the events on the 25th of April Bridge. As an interviewee put it, the basic thought was: "They did it, they should pay for it", referring to the government. Citizens and wider constituencies felt disconnected of the decision of the Minister of Public Works and the government. They considered that a lot of knowledge created during the process was either ignored or only partially used.

CHAPTER V

FINDINGS

THE MEANING OF INFORMATION

The public and even close observers of policy making often think that if information is not used in a decision it is not used at all. In this case, most people thought that information was not used because the Minister of Public Works did not consider it in the decision. Due to that, they called the decision "merely political".

Based on this research, I concluded that this is a misleading and partial assessment. I think there was plenty of information, and that information was used, reframed, and restructured. It might be that the Minister did not use it for his decision. This does not mean that information was not used by many participants, nor that it was not influential.

I consider that information is used when it makes a difference. When people look at it, talk about it, think in particular ways because of it. It makes a difference in the way they perceive an issue. It is in this process that information may influence people's views. It may lead people to reformulate their perspectives, or it may bring new ideas. It is while doing these things that they use information. It is in this process that information influences them as they learn. Data *per se* is not influential. To become influential it has to fit a purpose, it has to explain something and to be connected to some idea so that people can understand it. That is why it is important for the participants to put information in the light of a problem. This is what can

happen in group discussions. While doing so people begin understanding information, and changes in the way they see the problem may occur.

Frequently changes in people's views happen in a subtle way. People sit down, think about the problem, talk about it, relate the issues, get nuances and suddenly some idea fits in. This new idea resulted from reflecting and maturing the information in the context of the issue. It is a sophisticated process that moves along by itself. It is not something you can put the finger on. This process was identified in the literature as the "enlightenment" (Janovitz 1970, Weiss 1977), meaning that information influences without being actively used (directly translated into a decision). It is the most effective way that information gets used in policy.

> "Information influences plans and public actions by becoming embedded in the thought, our practices, and institutions of a community. Thus, when information is most influential, it is also most invisible." (Innes, 1995)

There is plenty of evidence in this case that information was widely used. The GATTEL Planning team used it while discussing the issue, reframing the problem or coming up with a new crossing alternative. Environmental associations referred to it when working together trying to avoid irreversible environmental damage in the estuary. The team working in the Land Use Plan for the Metropolitan Area of Lisbon used it when defining the policies for the region. Municipalities dealt with it while developing their municipal plans. Professional groups used it to construct their arguments when they got together to discuss the issue of the bridge. Political parties analyzed it in search for a position on the bridge issue.

The GATTEL Planning Team (GPT) was the main group using information to address the specific issue of the crossing in the early stages of the process. Their task was to study the location of the new crossing over the Tagus estuary. The core of the GPT, without knowing its consequences, created a group process. That made the team members use information in a way very different from the usual in similar cases. This team sat regularly together, compared notes, discussed information being collected, identified further data needs, brainstormed about possible crossing alternatives on the light of information (e.g., the maps with the North and South road network) and identified the advantages and disadvantages of each option, drawing out of their knowledge of the region and out of available data. While doing so they used information.

THE STRUCTURE OF THE GATTEL PLANNING TEAM (GTP)

The GPT was organized as an interactive process supported by data generated by a set up structure designed by its coordinator. The GPT was constituted by a core team and several subgroups. These subgroups worked directly under the supervision of the coordinator of the GPT (see Chapter IV). They were responsible for specific tasks mostly related to the collection, analysis and interpretation of data. Therefore, their function was mostly to prepare

information to be used by the core GPT. Four individuals integrated the core group of the GATTEL Planning Team. This group included two professionals in transportation (the coordinator and a member working in close connection with him), an urban planner and an environmental engineer. While the first three already knew each other and had worked together before, the last one was brought into the process by the representative of the Ministry of the Environment in the Steering Committee.

This is important because the three members already acquainted had previously developed a common understanding of some issues under debate in the region. When they started they already had a common language and they shared understandings of the way the town operated. For example, they shared the view that transportation and allocation of land uses depend strongly on each other. This meant that by the time they started this job, they had already overcome the first stage of a group process, the phase of building trust. Meaning, that they shared social and intellectual capital.

THE SET UP OF INTERACTIVE PROCESSES

Two features of this group are important here. One is the fact that the group started with experience of working together and with some common understandings. The other is that the amount of time for getting started could be less than a group with unacquainted members. The usual first stage of group processes took place before they began. This is an important reason information was used. The team departed from a more advanced stage than most groups and its members had already discussed a part of the information before. There are good chances that these two reasons had a great contribution to an effective use of information and facilitated the establishment of the group process since the very beginning. This core group of the GPT was a key player in the whole process of this case study.

The members of this team relied on their knowledge, on the information produced by the subgroups of the GPT, and on the work of consultants hired to respond to specific "holes" in the data -- the important information missing. They also used data from previous transportation and planning studies done for the region by various entities. Team members reported that networking was also a good way to collect information. The team members saw it as a mode to have access to up to date information, particularly to data that was not public yet. This is important, as at that time several public agencies were collecting information which was not yet prepared in public form (e.g., the municipal plans going on in the region, the National Institute of Statistics at the time collecting information for the National Census on Population and Housing). It was mostly through networking that the GPT was able to get a lot of new information. When they were asked why would someone be willing to give them such information, the answer was that much of it was done on the basis of trust. But there was more to it.

In fact, the team got often data in raw form, worked it, oganized it and structured it (e.g., by aggregating data counts in tables). Afterwards, they gave this treated information back to the agency that had supplied it. It is this value-added information that made a difference. Some of the agencies supplying raw information recognized that they did not have the personal or financial resources to deal with the collected data in time to be useful for to GATTEL team. These entities reported satisfaction to receive this data back in a more elaborated form. They were also happy to have this data handled in a shorter period of time than if they had to do it. It is this value-added to information that made a difference.

This assistance to data providers also helped to build trust and credibility of the GATTEL Planning team among professionals. More, the expanded networking generated with this mechanism of collecting information also encouraged interaction with a wider number of professionals working in other agencies. These professionals, when interviewed, reported a good professional interaction with the members of the GPT.

During my initial contacts, and even in interviews afterwards, all the members of the GPT core showed a good working relationship with each other, a strong commitment towards the study developed (e.g., a sense of proud for having produced a good study in such a short time), and a sense of connection towards the other members of the group. This is what happens when a group process establishes a positive interactive process and people listen to one another and jointly solve a problem. While talking to them I found interesting that their enthusiasm for the project overcame the long intensive working hours required by the urgency of the study. What counted for them was the quality of the study produced. This shows a strong commitment to the project, feature often generated in group processes but less frequent in more solitary analysis or standard bureaucratic procedures.

It is the ties established between the team members, their common understandings and their commitment, supported by a positive interaction, that contributes to explaining the quality of the documents produced by this team. The networking established with the wider professional community also contributed to the credibility achieved by the team. In fact, people interviewed confirmed that the GPT documents were widely accepted as accurate and fair. Even professionals with different views on the issue had a good impression about the work outcome of the GPT. For example, one of the coordinators of a previous plan, who considered *Montijo* as the priority choice[1], also accepted that in the longer range a bridge in the *Barreiro* would be important.

Even documents that received little public exposure represented high quality work. For example, the characterization (Document 3 of GATTEL) of the metropolitan area, one of the documents with least public exposure, is an exhaustive excellent description of the region profile, historical and recent trends, besides interpreting the urban and transportation

[1] It was the only connection presented in the plan he led.

development in a interconnected way. Usually, documents characterizing an area are mostly descriptive, giving a few or no clues to how each analyzed factor influences the other. They frequently present good descriptive work of each component, but put little or no emphasis in the interconnections between them. In fact, from my professional knowledge on existing studies, plans and projects, I concluded that this is a study of quality, which has more than a merely descriptive objective, incorporating the interpretive aspects. It goes further than the 'business as usual' in the analysis of data. In the words of one interviewee:

> "Document 3 is an important document with all the ideas of characterization of the AML. It is a great document for anyone willing to do something in the AML ... It used other studies and articulated them. This document is important in the study of the AML in terms of characterization of the territory ... It gave support to Document 4" (urban planner)

I think that what made the difference here was the on going interactive process that favored a more elaborated approach to information. This meant that the team could present more nuances and to develop a sophisticated characterization.

I think that the characterization study is one more proof that the level of understanding on the issues could only be achieved because the team worked in an interactive way putting information together, discussing the issues, and collectively making sense out of the data in relation to wider issues and their context. It is true that most of the members of the team were very knowledgeable of the region when they started working for GATTEL, but what the study shows is not only a good description of each component but a logical interconnection between the several factors making sense out of them.

The core of the GPT met on a regular basis to debate the information assembled in the light of the problem. One participant refers to these meetings:

> "I felt strongly in these discussions the logic of the arguments for the X corridor. ....The brainstormings were very important. There were very special minds (brains) discussing. This made the Steering Committee members sit in some of these meetings." (GATTEL member)

While getting together and debating the data they generated more knowledge. That made a difference in the way they saw the problems. All the team members considered that these meetings were very interesting and they showed real enthusiasm about the work going on in these instances.

Other GATTEL members, not part of the GPT core team (e.g., people of the Steering Committee or other professionals such as infrastructure specialists also part of the GATTEL), joined the debates in these meetings and contributed to the discussions. As a member put it "the discussions in these meetings were so interesting that frequently the other members of GATTEL came and became part of the debate". Furthermore, several consultants hired to do some specific studies for GATTEL (e.g. the team developing an environmental study for the Lisbon region), also got frequently involved and contributed with additional knowledge for these debates. This was an important exercise because it provided the opportunity to brainstorm on all possible alternatives, and identified the goods and bads of each one of them. While doing

this the team integrated the ideas of a wider range of people than just the group. As explained by one of the members of the GATTEL Planning Team, each option was submitted to a thorough scrutiny. According to his explanation, this meant that the team identified and listed the good points and the bad points (as "devil's advocate") of each option. Here are some accounts of participants:

> "I felt strongly the logic of the arguments of X (in favor of the) W corridor. It characterized a type of land use that I doubt will happen. (I think that) a greater (urban) concentration would be generated in that area and the remaining of the Peninsula (of *Setúbal*) would be away from development. The C solution decompressed all this and allowed for the requalification of those axes always forgotten." (GATTEL member)

> "We tried to see what the three corridors would generate in land use models for the Peninsula of *Setúbal*. We evaluated the impacts over the consolidated system." (urban planner)

These sessions took place during the process. Participants used information to support the points being made, they discussed it, reformulated it, and invoked it.

INFORMATION PUT IN THE LIGHT OF THE PROBLEM

At the beginning, before the GPT was set up, most people, including the team members, consensually accepted that *Montijo* was the choice. When hired, the GPT accepted the tight due dates. Instead of the usual six to eight years required for studying the location, in similar processes elsewhere, they agreed to complete the study in one year. The explanation offered by one of the members of the GPT was that "it was a piece of cake". The team members saw their work as a choice between two alternatives, one of which was the "duplication of the existing bridge", in the process just for "the sake of comparison" or as a "merely academic"[2] option. The other was the historical alternative, generally agreed upon by the technical community as the right solution at that time. At this stage there was a general agreement and no conflict about it.

The GPT initiated the study with the conviction that their task was to find the best crossing alternative. In the team view the goal of improving congestion was the one with highest priority. When asked about the North-South connection, the other objective stated in the legislation, most professionals responded that it was addressed by the future bridge proposed for *Carregado* up stream the Tagus, in the National Road Plan. Therefore, the team focused essentially in solving the congestion issue.

Most of the team views were strongly built on previous information on the crossings, some of them already one century old. The team members knew about the plans, the projects and the debates on the issue of the crossing, and shared some agreed upon conceptions of the problem with the professional community. All the written documents I went through and all the people interviewed said that initially they thought the bridge could be in *Montijo*. Municipal plans

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[2] *Público,* June 28, 1991.

being developed for the area at that time often took this assumption into account. Moreover, written documents issued from recent debates carried on with the participation of the metropolitan municipal politicians and technicians to discuss the future of the metropolitan area as a contribution to the land use plan for the region, also shared this view.

During my analysis of the documents and my talks with the people, the two relevant alternatives under discussion before the GPT started were the ones on the table at the beginning of the process. The general agreement among the professional community then favored the construction in the East corridor (*Montijo*). The more recent documents analyzed stuck to the above mentioned two alternatives, giving priority to the East solution. What this shows is a shared acceptance of a bridge construction in the East corridor (*Montijo*) among most of the professional community.

GENERATION OF ALTERNATIVES

Searching for alternatives, the GPT brainstormed to identify all the possibilities for crossing the Tagus estuary. When asked how they had done that, one of the interviewees explained that they looked at the maps showing the transportation networks of the North and South banks and established all the main possible connections between the two networks. Therefore, what they did was to use information (the maps) to generate the possible links between these two networks. A member of the GATTEL, when interviewed, identified these professionals as

"people used to looking at maps."

What this shows is that the possibility to read visual information — maps — was part of the team skills. It also shows that the way to generate the alternatives was by putting together existing information in the light of the problem. In this case, the team drew the possible main connections between the two networks shown in the maps. The development of all possible crossings was a result of people looking at information — the maps — and using their views and knowledge to suggest the possible connections.

Part of the alternatives identified this way were similar to the ones raised in previous documents (studies for the existing bridge, municipal plans, written technical advice, transportation projects). The team carried out a tight scrutiny of the alternatives to identify possible positive and negative effects associated with each one, and listed them. Information generated this way became part of the report they produced comparing options. This report became widely known by politicians and professionals working in the region. A lot of this information was used later on by the GATTEL members, by professionals working in the area and by politicians, while arguing and defending their views on the issue. The GATTEL

documents did not consider all the alternatives generated during these brainstorming sessions, just the ones feasible for construction.

In fact, after the brainstorming sessions to identify alternatives and strong and weak points, some of the considered crossings were eliminated because the team found them impossible to construct due to several reasons. For example, in the case of the crossing linking the downtown plaza (*Terreiro do Paço*) with the South, one team member identified disruption of the *Baixa Pombaline* [3] as the explanation for abandoning alternative. The team thought that the idea to disrupt an important downtown historical area would be unacceptable. Once more information influenced their decision to abandon this option.

INNOVATIVE FEATURES

The GPT new procedure for selecting the location of alternatives

The need to increase process efficiency to comply to the tight due dates imposed, made the GPT coordinator search for information. By putting information together, he was able to come up with a creative solution. The methodology developed by the coordinator, in search of reducing the length of the procedure for the initial part of the selection and comparison of alternatives, shows creativity and was identified by some interviewees as innovative. The proposed mode of operation resulted from putting together information on similar cases of locational decisions and framing the issue to respond to the need in shrinking the procedure time length. Therefore, the coordinator of the GPT, conscious of the need to comply to the tight due dates, analyzed the methodology of several similar projects carried out elsewhere. While doing so he developed a way to reduce the amount of time initially needed to identify and compare the alternatives.

His idea was to begin by assembling the alternatives in corridors and to study only afterwards the impacts on land use, environment, transportation resulting from construction of an alternative in one of these corridors, instead of considering a more detailed analysis for each of the alternatives at the outset. It differed from the usual procedure because instead of analyzing each identified alternative *per se*, what would require more time due to their number, it follows initially a more comprehensive approach at the corridor level. A detailed analysis of each alternative is only carried out after selecting the preferred corridors, and just for the alternatives in the selected corridor.

With this in mind, the alternatives were assembled into corridors. As defined in the new procedure, a corridor could only be considered if it contained at least one feasible crossing

[3] Name given to the downtown of Lisbon, after *Marquês de Pombal* the Prime Minister at that time who ordered the reconstruction of the downtown area after the Lisbon earthquake in 1755.

alternative for construction. This rule almost eliminated the central corridor — the one containing the new unexpected alternative — due to concerns with the feasibility of land insertion of this alternative. This was because it seemed difficult to insert a bridge in an area of dense urban occupation in the North bank. Therefore, a team member and a bridge construction specialist ("a man of the bridges" as stated by one interviewee) went on a field exploration. After considering the possibilities *in loco*, they concluded that the construction was possible. One of the interviewees said:

> "We almost abandoned *Barreiro* (option). For a while we could not establish a design that satisfied us. It was only at the end, in a visit to the place (where the bridge would be anchored), that we solved successfully the design." (GATTEL member)

Furthermore, this alternative also allowed for the installation of a train crossing connecting the Northern and Southern train networks, a solution long sought by transportation professionals.

What this example shows is that a mix of indoor and outdoor field work to gather information is frequently needed to analyze the options, without which important knowledge may be lacking. Such qualitative study is frequently not referred in the reports issued afterwards, as happened in this case. Though people fail to mention this type of data (may be because it is not considered scientific information), it very often plays a relevant role in bringing knowledge to the process. This is obvious an example of such a case.

Some specialists argue that if the expert hired is good he is able to assure that all the data needed will be collected and analyzed. This may be true to one solution type of problems, but may fail in more complex, multidisciplinary issues. In these cases professionals can hardly exhaustively cover all the needed data. Frequently, more data becomes needed when some new solution is proposed, in order to analyze its possibilities. Moreover, sometimes the lack of information is more a lack of knowledge of the real world than of some scientific information. Since, little or no importance is given to this type of data, it is frequently omitted from the reports, even when used. In the present case, this shows that even a team with substantial data and a much knowledge about the metropolitan area still lacked some information. They had to gather it directly from reality, and as a direct response to a need felt due to a new alternative developed during the process and not thought before. In fact, what happened was that this new alternative, developed indoors, required further information to confirm the feasibility of its construction. This shows that by using information new options could be generated. When this happens additional data can be necessary to assert their implementation. This happened because information was missing and because a new alternative made people realize they needed more information.

The reason I described in more detail the procedure of generation of alternatives resulted from my conviction that the literature offers little understanding on the processes of option development, frequently summarizing this stage as "then the alternatives were generated". Usually, the literature does not specify how people got down to the alternatives or how they

operated to identify the options. This also happened with people during my interviews. When they were asked how they got to the alternatives, they showed surprise with the question and simply said that they looked at the data and identified the alternatives. It took me several days, and long conversations with different participants on the meetings, until one of them explained that they looked at the maps and connected the North and South road networks, describing the process in more detail.

This case is a clear example of people reporting having used information but with difficulties in identifying how they used it, or how it influenced the results of the process. It is this process of generation of alternatives, by looking at the visual information, and putting together knowledge through debate, that allowed the GPT to develop a new alternative, that had not been previously conceived, or much less considered.

The new alternative caught everybody by surprise. Part of the explanation why it was developed is that when a group integrates information from different sources and from different sectors within a problem frame, there are good chances an idea for a new solution appears. The composition of the team shows that the approach followed was multidisciplinary involving three main components: land use, transportation and environment. Therefore, information generated in different fields came into the debate. When the team members met and discussed the information in the light of the problem, this originated a different way to see the issue, made them review their views and while doing it, they came up with a new alternative. For example, when they came up with the *Barreiro* option by connecting the two road networks (North and South) that made sense. They were searching for all possible connections and here it was one that nobody had seen before. Because, probably, nobody had the mission to identify all possible alternatives. They were concerned with other issues within the metropolitan area and, therefore, were taking for granted information that already existed on possible crossings.

The new option in *Barreiro* had not emerged before because this was the first time that a group of professionals was given the job to collectively find the best crossing alternative of the estuary, though a lot of information used in this case had also been used previously. Professionals of the region used part of the information before, when they worked for other type of studies. For doing this, forums were organized. In the eighties two forums assumed importance for our case. One, gathering representatives of seven Northern municipalities of the AML to discuss the accessibilities and the road network, was described by one participant:

> "Several meetings were held with some results, mainly in the merging of points of analyses, views, contacts, mutual acquaintances, which allowed substantial progress ... they allowed to assess in a more shared way a set of problems." (pp.2)[4]

The other was a series of collective debates carried out to decide on the future development of the metropolitan area, by the initiative of two mayors and involving local politicians and technicians. In the oppening address, the Mayor of one of the municipalities said:

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[4] *O PROT como Plano - Programa da AML,* minutes of a seminar held in July 4, 1989.

"need for dialogue to assess the shared problems and tune a strategy of options which will effectively allow a consonance between the several decision levels." (pp.1)[5]

These individuals got together to discuss the main issues of the metropolis, as a contribution to the coming Land Use Plan for the Metropolitan Area of Lisbon. Their purpose was to decide what future image for the metropolitan area they wanted, not to discuss a new crossing over the Tagus. Their problem definition was to agree on the future image for the metropolis and not to find the best crossing alternative. Information was used to address their objective. The analysis of the written documents issued from these meetings and the talks I had with several of the participants showed that the bridge crossings considered in the discussions were those already exposed. More, though the crossing of the Tagus was talked over, this issue was subsidiary and seen by the specialists as with no immediate urgency. They did not generate a new crossing alternative, but presumably have technically influenced the crossing alternative with the ideas generated in the debate. They probably prepared the grounds for the future development.

More than anything else, it is the setting up of a group (the GATTEL) to study the new crossing alternative for the Tagus that made professionals use information in the context of a new problem definition — the best bridge location. These professionals used information in the light of this new problem definition. While doing that they saw what nobody had seen before, as stated by one of the interviewees:

"It is incomprehensible how it took so long to find out."

adding,

"No one had seen what was under our eyes."

Maybe it was under their eyes, but the truth is that all the forums emerging in the Metropolitan Area at that time had other issues in the agenda and this was just a subsidiary element, taken for granted in the form of the previous discussed alternatives. Therefore, information was used, but for other purposes, not to find the best crossing alternative.

Several people confirmed that the GATTEL was the first example of an agency (or group) that was specifically created with the objective of defining the best crossing across the Tagus (or so the team thought). Some interviewees identified this as the reason that provided the opportunity to create a new crossing alternative. What they meant was that it was the first time data was seen in the light of a new crossing of the estuary.

What happens in such a group can be understood by analogy to the story of the elephant and the four blind men. There were four blind men and an elephant. The blind men were asked to describe the elephant. The first blind men leans against the elephant body and describes it as a wall. The other grabs one of the legs of the elephant and thinks it is a tree. The third one

[5]Document of the Metropolitan Area of Lisbon July 1989. "O PROT como Plano - Programa da AML" proceedings of the seminar of July 4, 1989, Document of the Metropolitan Area of Lisbon, July 1989.

touching the elephant tail identifies it as a brush. The fourth touches the elephant trunk and says it is just like a snake. What this means is that each one of them had an understanding of a part of the elephant, but failed to have the overall picture. To draw the comprehensive picture they must put all the information together. This story illustrates that the independent interpretation of the parts by individuals, even if absolutely accurate, may fail to give the overall picture.

Integration of the environmental component

The integration of the environmental component as a basic dimension of the problem increased the number of factors playing a role in this process, and meant it was more likely they would reframe the issue. In previous transportation studies environmental concerns were at best subsidiary. The introduction of the environmental component is seen as an innovation by several interviewees (e.g., GATTEL and environmental association members). It was the first time the government included a representative of the Ministry of Environment in such a process. For a long time before, locational decisions of big infrastructures were the exclusive responsibility of the Ministry of Public Works. In a business as usual procedure, it was common that a team of this Ministry would strictly operate within its limits. Most information would stay unknown to the technical community and the public in general.

In this case, the environmental component was a concern of the government since the creation of the GATTEL. The GATTEL Steering Committee included, from the beginning, a representative of the Ministry of Environment. These are the reasons, suggested by the interviewees why the Government wanted to include the environmental component into the process:

(1) a will to carry out, or to make it look, a more credible process due to the new environmental concerns of the population and/or the new requirements imposed by the EEC/EU (since an application for EU funds would have to be made),

(2) the general conviction of politicians and professionals at the start of the GATTEL, that the process was non conflictual due to the several years the issue existed and the initial agreement of the professional community in the initial phases of the process,

(3) the advice from the initial group, part of them future elements of the Steering Committee of the GATTEL who were responsible to establish the structure of the GATTEL and were eager to develop a sound work,

(4) the mythical meaning of a bridge to the population in general and to the image of a politician, as revealed by the names given to the existing bridge: first *Salazar* Bridge[6], and later on 25th of April Bridge[7].

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[6] After the political strong man of the authoritarian regime at the time.

[7] After the date of the military coup that in 1974 overthrew the old regime.

Environmental issues were assumed to be essential to the decision. Anyway, the acceptance that the inclusion of environmental considerations in the decision was decisive meant an additional concern beyond what used to be considered before. As a result, the issue of the bridge location is shifted from only finding the best solution in transportation (with mobility playing a central role) and land use terms (with concerns for land development), to include the need to consider the effects on the environment.

Compared with previous similar studies, in this case a substantial amount of environmental data existed and was integrated in the process, influencing the participants views. The environmental study requested by the GATTEL from a leading environmental association contributed, in the early stages of the process, to the environmentalists' conviction that the bridge decision was going to be a "model case". The environmental study, and the interaction of the GPT with the environmental consultant of that team, supported the analysis of the environmental impacts expected for each corridor. This shows that a substantial amount of environmental data existed and was integrated in the process, influencing the views of the participants. One of the main consequences of the consideration of environmental information by the professionals was to make participants be aware that the *Montijo* option anchored in the Southern bank next to an area of high ecological value. A second effect of this information was that it was not just the short range direct impact of the bridge construction that was negative to the environment, but also the future impacts resulting from creating new accessibilities. In sum, what this shows is that the introduction of the environmental component made a major difference. First, it challenged the long accepted *Montijo* option. Second, it made participants more aware of long term consequences on the environment in a broad sense.

The GATTEL private sector mode of operation

People I interviewed thought that the origin of the GATTEL President in the private sector was an important factor in making the process work efficiently. He was also a man who had the confidence of the Minister of Public Works. These two features played a role in his management practice. He brought to the GATTEL the form of operation of a private entity. This was confirmed by several people working in or hired by the GATTEL. Professionals saw the private mode of operation as more efficient than the usual public functioning. The effects of the private mode of operation are obvious in several parts of the process. For example, in the tight compliance to the due dates, which bureaucracy usually handles with more flexibility. The GPT complied to the due dates initially imposed and issued the outcomes accordingly to the phasing chart previously established, even after some unexpected developments along the process.

The process organized with the creation of the GATTEL represented a change in the way public processes are set up. The team assembled independent professionals who were not

directly dependent from the Ministry of Public Works — the GATTEL Planning Team. Such a group worked differently from 'business as usual' and offered the GPT considerable space for autonomy, favoring creativity. Group processes become creative when they have sufficient independence to carry on debates on information. When they are solving problems and everyone can talk and learn. While doing so, the groups create their own dynamics and the participants debate data in the light of the problem. The result can be a new solution integrating information on different subjects. It is the interaction generated among the participants of these meetings, based on trust and shared meanings, that establishes the context for the generation of innovative options. Since the GPT created a group process this became possible, though it is doubtful that the GATTEL realized it at the outset or explicitly intended to achieve it.

CONSEQUENCES OF NEW INFORMATION GENERATED

All these discussions and conclusions were a direct result of looking at information in the light of the problem and understanding data in response to the several interests of the metropolitan area. It was the use of information that generated the new alternative. It is also due to the use of information that the chosen option fit better the problem from the perspectives of several players (e.g., environmentalists, urban planners). It is, once more, information that influences the reframing of the problem and shifts the debate to new grounds — the desired model of development for the metropolitan area.

The unexpected alternative quickly got supporters among environmentalists and urban planners. The former saw this new solution as an opportunity to avoid the irreversible environmental damage foreseen in the *Montijo* option. The latter, saw it as an opportunity to link two urban areas, instead of an urban area in the North to a rural area in the South. This came as an opportunity to avoid the error of three decades ago when the existing bridge was constructed, generating a new front of development. This new solution suited well environmentalists and a new generation of urban planners who show growing concern with sustainability.

The attention of professionals concerned with the location of the new bridge shifted from congestion to the restructuring of the metropolitan area, and forced the confrontation of two models of development. One that for long defends new poles of development to decentralize the town, and a new one that calls for the "reknitting of the urban tissue" by directing growth to the already infrastructured vacant urban spaces, rather than creating new fronts of development.

The position of urban planners was strongly supported by recent evidence that demand for land development was slowing down due to declining demographic trends. Moreover, there

was a general conviction among specialists working in municipal plans that there was plenty of infrastructured unoccupied land available.

Therefore, the new alternative fit better the model of development of the metropolitan area and responded positively to the on going debate among local politicians and professionals working in the area. This debate started before the GATTEL was created, when municipal politicians and technicians got together to discuss the future of the metropolitan area. The idea, then, was to contribute views to the land use plan under way.

It is the unexpected alternative developed by the GATTEL during the process that generated a lot of conflict and forced a great amount of people to reformulate the problem and to change their views. After the new option appeared, professionals concentrated in comparing the *Montijo* and *Barreiro* solutions, and the West alternative was dropped out. While analyzing these two crossing possibilities the team became convinced of the advantages of the new option. Among the four main reasons advanced in favor of the *Barreiro* option, only congestion was originally given:

- it solves congestion best

  Because the central option is the best connection between the residences of the commuters using the existing bridge and their place of work, it would serve better the users of the existing bridge and, therefore, it was the best solution to divert traffic.

- it was located well away from sensitive natural areas

  Since this alternative was more towards the West it was located further away from an important natural area, responding better to environmental concerns. Plus, the fact that it connects two urban areas was also appealing to the environmentalists. They opposed strongly the connection between densely populated areas in the North bank and rural areas in the South, because they saw it as an encouragement for urban development in agricultural fields.

- it connected two declining urban areas and could operate as a "tool of recovery"

  This was a powerful argument in the process. It was particularly suitable to the urban planners concerned with the declining of some areas in town. This option increased accessibility and, therefore, professionals saw it as a good device to cure the ongoing difficulties felt in those areas.

- it allowed for the North-South connection by train line

  This was thought by several participants as a good reason to select the central corridor. The connection of the Northern and Southern train networks is not a new issue. Several professionals, particularly transportation specialists, raised it often, as an important piece needed to complete the national train network.

INFORMATION INFLUENCED CHANGES OF POSITIONS

The use of information during the process influenced the way people saw the problem and was responsible for the changes in people's views. Interviewees identified several professionals who initially rejected the *Barreiro* option, but became enthusiastic defenders of the new option afterwards. They rejected it first until they learned how it would work. Though this new alternative caught a lot of people by surprise and many participants initially rejected it, gradually it gained support as players looked at the information, analyzed it, reflected on it, and talked to other participants about it. Then, understanding was developed as players used information in the discussions over different options. For each option they put together knowledge of several components and they came out with articulated explanations and meaning. For example, the image of the potential increase of accessibility through the central bridge as a tool of recovery of declining urban areas is a result of putting several factors together:

(1) that a bridge increases accessibility,

(2) that areas with increased accessibility undergo development,

(3) that, in declining areas, development is likely to invert the process of decline.

Among the professionals recognizing that the new alternative came up as a shock is one of the GPT members. This member acknowledged that the image that came to mind hearing about the new option was

"a battalion of cars entering Lisbon and clogging the city".

This, because the interviewee saw the connection as a traffic generator since it linked a populated Southern urban area to Lisbon. The views of this GPT member were based in another underlying assumption that contributed to the position assumed — the perception that all cars would be discharged in only one exit. As the discussion continued the team member realized that the link was supposed to work as a distributor, a thoroughfare with several exits to distribute the cars along it. As a result, the initial objection disappeared.

The coordinator of the GPT made a difference. He was regarded as very effective and persuasive. A large part of this persuasiveness resulted from the use of information. The combination of his personal skills with a good capacity to make sense of interrelated factors by putting information together contributed to build the understanding of players concerned with the location of the new bridge. When I asked one of the team members what contributed to the change of views of the people inside and outside the GATTEL, one member said

"it was the power of persuasion of the coordinator of the GPT."

While presenting the different options, the coordinator of the GPT used data to make his point, showing how different components related to each other and what that meant in terms of

consequences for each one of them. I had the opportunity to talk to the coordinator several times. I was impressed by the capacity he had to describe the issues and to explain interrelated complex factors very clearly making them easily understandable. He showed a good ability to explain the information in a meaningful way.

Moreover, the coordinator worked as an information manager. What I mean by this is that he was able to make sense out of the interrelation of factors, of knowledge coming out from different specialties, bringing together information and synthesizing it in a meaningful dynamical structure. Though group processes can play an important role if they involve a good interactive process, it is also essential that someone works directly with the information generated by the group, to assure that the information debated, the new ideas generated, and the concerns expressed are kept in the process and meaningfully recorded for future use. Someone is needed to do the backstage bookeeping work on information between the meetings, such as reorganizing the notes, structuring the main ideas, and defining the future agenda (e.g., list all the goods and bads of each alternative). Because this information has to be recorded, structured, and brought up again to redirect discussion, someone has to be sure to keep in the good ideas, to make clear the interrelation between factors debated, and to maintain continuity.

Plus, the coordinator had an extensive knowledge of the metropolitan area. This knowledge was important for setting up the process, knowing where to look for the relevant information, and stimulating a more interconnected view of the region dynamics. Some of this knowledge was shared with the other team members with whom he had already worked. Part of his background knowledge came from his previous involvement in a team restructuring of the transportation in the Lisbon region, when he worked for the Department of Terrestrial Transportation[8]. While working there, he participated in a team that developed an extensive work with the collaboration of specialists from Lausanne, Switzerland. One of the subprojects was about multimodal crossing of the Tagus and provided him with the opportunity to reflect on the transportation issues of the metropolitan area in connection with possible Tagus crossings.

Though it is in part the use of information that makes a difference in this process, that could not happen without group processes and a good coordination. This is particularly true in this case given the tight due dates that required greater efficiency. Information appears in many forms (facts, data, stories, arguments) and is brought to the process by many people (professionals, members of interest associations, politicians). This pool of knowledge does not have any influence on people's views if it does not emerge into the open discussion and does not get argued over. The group processes, however, allow that discussion to happen. It is the fact of making available a space to discuss information in the light of the problem that

[8] DGTT - *Direcção Geral de Transportes Terrestres,* Department of Terrestrial Transportation.

encouraged people to exchange views and to listen to the others. This case showed a good openness. It is this openness that made people feel it was legitimate to raise these issues. While doing that they integrated information generated by different sources. This is only possible through the opportunity of interaction provided by group processes that have certain characteristics. To be successful these groups are constituted by a group of peers who respect each other, have a lot of expertise among them and are not told what they can or cannot talk about. It is these groups, not any other, that can set up such a process. In such group processes there are good possibilities that some creativity appears. That was what happened here, why the GPT generated the new alternative. The group created met the Habermas criteria of rational communication (Habermas, 1973, 1983) and the characterists that social psychologists considered essential to assure the success of these groups (Dryzeck, 1990; Argyris, 1982, 1993; Bateson, 1996).

The GATTEL group revealed creativity in the way it handled the issues. This happens when a group has a good interactive process and debates information in a context of autonomy. Groups under certain conditions are known to be creative. In fact, they break down assumptions. Having a group with diverse experiences assembled and operating under an interactive process, it was likely that its members would not do things according to standard practice and would develop through paths not tried before.

When the GATTEL exposed publicly the unexpected alternative, opinions about the best alternative diverged within the technical community, the political parties, the interest groups, the municipalities,

> "unity of the municipalities ended up when the central corridor (*Barreiro*) appeared." (transportation planner)

The new option was very different from the already accepted *Montijo* crossing. The previously existing consensus was broken. Politicians and professionals interested in the new crossing who had not been involved had different ideas. Some did not know what to think about the new alternative. Others opposed it. For example, politicians of *Montijo* opposed the new option because it would take away a long sought opportunity for assuming a more direct connection to the capital. The traffic engineers willing to "close the ring" did not get convinced, because the new solution did not fit their problem definition.

Still others, namely the professionals working in the development of the municipal plans, initially reacted against the idea of a new alternative. One of the reasons was because their plans only considered the *Montijo* alternative and this new crossing required substantial changes in these plans (e.g., *Barreiro* municipal plan, the municipality with the South anchorage of the new option). More, these changes required a revision of the initial technical advice given to the local politicians. Participants of accomplished plans also opposed it, because to accept the *Barreiro* link meant a substantial revision of the views proposed in their plans (e.g., Integrated Plan for the *Distrito* of *Setúbal*, Land Use Plan for the Lisbon Metropolitan Area). However,

despite all this inconvenience, some of these players soon saw in the new proposal greater potential to solve some long standing problems (e.g., recovery of declining areas, containment of urban sprawl, keeping away from natural areas).

The case of the *Barreiro* municipality is a good example of change. Opposing initially this alternative, the team of the municipal plan soon understood that this was a unique opportunity to recover the municipality's decline. In a short span of time the team revised the information to develop a proposal for a possible insertion of this alternative in the road network. This happened because they analyzed information, reflected on what this new option could mean and discussed this with their peers.

> "The coordinator of the Municipal Plan of *Barreiro* when confronted with the possibility did not agree. He ended up agreeing that the connection with *Barreiro* had advantages, though he was reluctant at the beginning. If this is the corridor selected the town of *Barreiro* will become a suburban area of Lisbon. This may be the solution for the declining area." (transportation planner)

Also, the coordinator of the Land Use Plan for the Metropolitan Area of Lisbon was not enthusiastic about the new alternative at the beginning. His position was that no more bridges should be constructed between the two banks. Later on, he changed his views. In the opinion of one interviewee, it was the opportunity to rehabilitate the declining area of *Barreiro* that made a difference.

> "Even before the PDM was approved, in the first meetings held between the GATTEL and the PROTAML team, the leader of this team was against any more connections between the North and South banks. This changed during the debates. By the end, he ended up admitting that the central connection was the solution." (transportation planner)

The confusion generated among the technical community by the exposure of the new alternative was obvious. The newly generated information required change of a long lasting consensus in such a short time and created a lot of disorientation among the politicians and professionals who had not enough time and opportunity to revise their views. This is evident by the contradictory news that appeared in the media during 1991. While some said that the new bridge was going to be in the *Montijo* corridor others stated that the bridge would be in the *Barreiro* corridor, as shown by the following newspaper headlines:

> "New bridge over the Tagus links *Montijo* to *Beato*" - Semanário, March 16
>
> "Barreiro may take away the new bridge from *Montijo*" - Expresso, June 29
>
> "New Bridge will connect *Montijo-Alcochete* to Lisbon" - Diário de Notícias, June 30
>
> "New Tagus Bridge will be between *Chelas* and *Barreiro*" - Expresso, August 17.

This also reflects a lack of consensus among the public about the best place for the location. More, the amount of news on the crossings coming out during this period shows that the future location of the bridge generated a lot of attention. The diverging views in these news illustrate the level of controversy of the issue and its degree of complexity.

OPPOSITION ENHANCES THE USE AND GENERATES NEW INFORMATION

Public agencies

In September 1991, the Minister of Public Works announces to a newspaper (*Público*) that the new bridge is going to connect *Olivais* (North Bank) to *Montijo*, accomplishing one of the alternatives in the *Montijo* corridor. This announcement, and a later decision of Minister of Public Works to shift the preferred option to the other alternative in the *Montijo* corridor, anchoring in the North bank at Moscavide (instead of *Olivais*), generated a lot of controversy. While generating conflict it also brought into the open a lot of information. Environmentalists, transportation specialists, urban planners and several professionals working in the region used information while arguing about their values and positions.

Despite all the information that the GATTEL Planning Team analyzed and structured, Document 6 was issued in September 1991 with a final section with recommendations that is seen by professionals as contradicting the technical advice of the rest of the document and diverging from the expertise offered by the GATTEL Planning Team. This incoherence generated a lot of debate among the technical community. It was identified by several professionals who closely followed this process as the reason to consider that the decision was political. The credibility of the process leading to the decision was challenged. Those opposing the *Montijo* alternative became more outspoken and assumed more radical positions. Many people pointed out to the inconsistency of the final recommendations with the remaining technical advice claiming that, after all this process was similar to other public decisions where technical advice is sought by decision makers to be ignored afterwards. More, one professional stated that

> "never was the gap between a technical study and a political decision so wide."

The recommendations of Document 6[9] of GATTEL do not mention the issue of congestion or even refer which one of the corridors was most likely to better address it. Congestion was completely forgotten at this stage. Despite being an objective stated up front in the legislation for solution at the time of the creation of the GATTEL. Though congestion was implicit in the whole process and many professionals considered it the main reason for a second crossing, it was omitted from the recommendations. Most of the interviewed professionals saw congestion as the main reason to trigger the construction of a second bridge.

Another puzzling suggestion in the GATTEL document recommendations is related to the alternative in *Montijo* corridor. The recommendations in this document suggested the selection

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9 "Evaluation of the Corridors — conclusions and recommendations".

of the alternative B of the *Montijo* corridor, the least technically preferred in this corridor. Reports with conclusions and recommendations that do not match the findings happen often in bureaucratic settings. This unmatching between the report findings and the recommendations means that the GATTEL Planning Team creative process led to a situation unforeseen by the bureaucratic *status quo* (the government) and forced it to regain the control by setting up the door and returning to the 'business as usual' procedure of bureaucratic settings. Closing up the doors limited the exposure of information, but a substantial amount of it had already been publicly exposed. It is exposure of information to a wider constituency that made a difference. It triggered several actions carried out afterwards (organized debates, press conferences, political contacts, letters of complaint, public mobilization).

The interest a new bridge in the Lisbon area generated among professionals, the amount of information already circulating within the professional community due to the developed networking, and the openness of the process made a difference. It is information that played an important role while being used in the several events that took place during the conflict.

The issuing of the Conclusions and Recommendations by the GATTEL was followed by the Minister's public announcement that the GATTEL would pursue studies on the alternative B of the *Montijo* corridor. He did not follow the technical advice given in the GATTEL reports that led to so much speculation. People advanced reasons for why the Minister did opt for a distinct solution. I do not have any way to find out the truth behind them and it might well be that the reasons people proposed are not even close to the truth. Maybe the Minister never read the documents. Maybe he just looked into the final recommendations. It might just be that the new solution did not fit his agenda.

The Minister's decision generated opposition from some public agencies. The first strong reaction came from the Expo 98 as soon as it became public that the GATTEL would follow studies on the alternative B of the *Montijo* corridor, connecting *Olivais* to *Montijo*. This entity governmentally mandated to organize the World Exhibition to be held in Lisbon in 1998) saw its project strongly compromised by this decision. The Expo 98 criticized the North anchorage of this option because it fell on the place reserved for the exhibition. Two pillars were to be built in the dock of *Olivais*[10]. By November, the Expo 98 was able to push further away the two mentioned pillars but was still unhappy with having a bridge on top of its land. As they stated, "from the worse the least: if the bridge cannot disappear at least (we) should push it away"[11]. This shows that the the Expo 98 put together two pieces of information, one on the location of the new bridge and its supporting pillars, and the other its own plans for the exhibition. While doing that Expo 98 understood that the new solution did not serve its interests and negotiated compromise: pushing away of the pillars.

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[10] *Expresso*, Nov 23, 1991.
[11] *Expresso*, Nov 23, 1991.

This decision of the Minister of Public Works for the *Montijo* corridor also found opposition within the government. In particular, the Ministry of Planning that supported the Land Use Plan being developed for the metropolitan area, the municipalities of the metropolitan region united against the initial position of the Ministry of Public Works (option B in *Montijo*), and the Ministry of the Environment showed concern about having a bridge next to a protected area.

Information was used by the various Ministers to defend their positions. The Minister of Public Works argued in favor of the *Montijo* crossing due to its merits for assuring the North-South connection. The Minister of Planning considered the *Barreiro* option as an excellent device to rehabilitate two urban declining areas and to avoid new fronts of development. Also concerned with the potential that the *Montijo* crossing had for encouraging development, the Minister of the Environment revealed his opposition because this connection in the South was too close to a natural area of high environmental value representing a long term threat.

Information was structured in the Land Use plan to fit the team problem definition. The team members saw that accepting the Minister's selection meant a complete revision of the plan including its underlying assumptions, meaning a reframing of the problem. As one professional stated, the decision to construct in the *Montijo* corridor perverted the concept of the Land Use Plan of the Metropolitan Area. The team of this plan, initially opposed to the *Barreiro* option, soon understood that this was the crossing that best served the model of development they defended, the containment of urban sprawl. Moreover, the potential that this option offered to help recover two declining urban areas (*Chelas* in the North, and *Barreiro* in the South) made it much more appealing in terms of urban planning. After developing this understanding, the team of the Land Use Plan became strong supporter of the *Barreiro* solution. When the Minister made the decision they reacted strongly. The decision did not fit their model of development. The Minister of Planning, who realized the advantages of this crossing for planning purposes, backed up the position of the professionals of the Land Use Plan team .

Environmentalists

Environmentalists used information extensively while developing actions to alert the government, the European Union, the professional community, and the public to the negative environmental impacts of the *Montijo* solution. No other group assumed so much relevancy in opposition actions. They strongly opposed the *Montijo* option because it linked urban land to an area of important ecological value and they developed several actions to revert the decision. These actions enhanced the use of information by a wider audience. They also substantially influenced the environmental associations structure and way of operation. Three environmental organizations — LPN, GEOTA and Quercus — took the leadership of the process. While

doing so they joined efforts taking advantage of joint resources, they learned to work with EU/EEC instances, they developed substantial networking inside and outside the country and, while doing this, restructured their own mode of operation, their views and their strategies. The consequences of the environmental associations involvement in the bridge location issue was so powerful that a public official considered "it was the bridge that united the environmental associations".

The persistent and extensive campaign led by the environmentalists established in minds of people a strong connection between the issue of the new bridge location and environmental concerns. One of the involved environmentalists stated: "the public image of the bridge ended up associated with the environmentalists because the opposition to the construction in the East corridor was led by us", "the environmental aspect assumed excessive importance in the game" making people associate the issue of the bridge location with the "birds of the Tagus". In his view this was somewhat negative because the public in general forgot other important socio-economic and social aspects. It might be so, but the extensive use of information on the environmental component, or better its public exposure, had the advantage of contributing to turn the environment into an active issue in the governmental agendas.

The integration of the environmental component by the GPT and the interaction established convinced the environmentalists that this was going to be a model case where environmental data played an important part in the decision. However, that did not happen. Integration of environmental data since the preliminary stages influenced the process in other ways. Initially convinced that this was going to be a model case, environmentalists took a while to understand, during the process, that though the GPT identified the effects on the environment, the information was going to weight little in the Minister final decision. The introduction of environmental data since the very beginning allowed to integrated it with data from other components and to become part of the whole. That proved to be important. First, the good articulation of the different components made the information meaningful. Plus, the meaning acquired by information was crucial in the actions taken by the environmental associations when proving their points of view and alerting people to the damages to the environment. The introduction of this data in the reports added visibility to the environmental component and credibility to the reports, because it became recognized as part of the process. It was included in a report produced by a governmentally mandated group and integrated the new environmental concerns of professionals and the public, besides fitting the requirements established by the EU/EEC. It is possible that consideration of the environmental component will became part of the terms of discourse in policy arenas and empower environmental

proponents as happened in other countries (e.g., environmental impact reporting in four proposals for major mixed use development in California)[12].

One environmental association — the LPN[13] — got involved early in the process. The GATTEL requested to the LPN a study on environmental matters. The most direct explanation for this is the urgency the GATTEL had in obtaining environmental information. The LPN members became aware of the process for the bridge location, as soon as the GATTEL developed the first studies. One of the interviewees explained that "persons in the central administration made us aware of what was being studied". When I asked why they were chosen, one environmentalist said that it was because the LPN was the oldest environmental association and had gained "technical credibility" over the years. Members of the LPN were often consulted by several agencies for their technical expertise. Another interviewee gave a more practical explanation: "probably it was recognized that the LPN was able to organize that information, or better since the GATTEL wanted to assemble the information quickly" and that would be difficult if "they had to follow the usual time consuming institutional processes". This refers to the standard bureaucratic procedure to request to a public entity to fulfill the needs of environmental data. Usually, the requests are formally made and wait to be dispatched by public officials of several ranks in the hierarchy, to be finally initiated. There is still another possible explanation for this association to be invited: it is the association that presents stronger features of environmental conservation, the type of expertise the GATTEL most wanted.

The three reasons played a part. The LPN was seen by professionals as the environmental association with a more institutional posture. Several of its members work in the public administration. So they are better equipped to play by the rules. This probably revealed at the time to be a more promising profile to deal with the bureaucracy. The urgency of the study and the tight due dates required the support of a more flexible organization with already sound knowledge in the area of the environment to carry out the task. Moreover, the expertise in conservation matters also played a role.

A team of the LPN members provided the environmental information in a written report and discussed it with the GPT, favoring an early integration of the environmental data in the process. Contacted by the GATTEL to develop an Environmental Impact Assessment (EIA), a group of technicians of the LPN ended up accepting to do an environmental reference study, but refused the EIA, as explained by one interviewee. They were suspicious of the way that study could be handled afterwards. This is evident by the concern the team showed to made explicit in the written report that it was not an EIA. The study was developed to identify the environmentally sensitive areas in the region. As explained by one of the members of this

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12 Innes, Judith "The power of data requirements" Summer 1988, APA Journal; Innes, J. The Role of Information in Communicative Planning,paper presented in the Annual Conference of the Association of European Schools of Planning, Glasgow, Scotland, Aug. 16-19, 1995 (pp. 7).

13 LPN - Liga Protecção da Natureza.

organization, the study was not an impact study, just a preliminary environmental work. Once accomplished, the LPN handed it to the GATTEL and several of its participants sat with the GATTEL Planning team to discuss the environmental aspects. When I asked one of the team members if the information they developed was used he replied "yes, because it appeared in the GATTEL documents". What this shows is that there was a concern to collect and introduce environmental data. The interaction among the team members developing the study and the GPT favored the integration of this information with the other components.

It is this study, and the follow up discussion in May of 1991 at the request of the GPT after reading the environmental report, that contributed to the GATTEL documents substantial information on the environment. As stated by one of the participants, this meeting "was not a formal presentation but a general discussion about the technicians preferred location". This observation shows that the meetings set up by the GPT adopted looser procedures than the usual formal presentations expected in bureaucratic settings. It was during this meeting that the LPN team took a 'technical stand' to avoid revealing its position about their preferred location, focusing only in "providing information on negative and positive impacts" of each alternative. At this time, the LPN was what one of its members called an association of "non decision makers", a group marked with a strong conviction of maintaining a neutral technical posture. One that is professionally ethical and credible. Later on, the LPN members were called by the GATTEL Steering Committee to "discuss the final positions of the association". In these meetings they felt it was legitimate to discuss their positions, as opposed to expressing interests.

What made a difference was the opportunity to discuss environmental information. In fact, the report handed by the LPN team followed a 'business as usual' approach. The team met, distributed the tasks, and each specialist developed his own area of expertise. They assembled the information in a written report. The time to discuss the ideas of the report was limited as stated by the person who explained to me the development of the report procedure. This was the 'business as usual' form of operation.

The LPN team behaved as neutral technicians in the technical context, but when they moved to the more political context (the GATTEL Steering Committee) they felt legitimate to take positions. In this new context they felt they moved upwards in the hierarchy, entering the decision level. This distinction between the technical level (professional) and the decision level (political), is a marked feature of the bureaucracy. That is also clearly shown in the phasing chart (see Fig.IV.13) developed by the GPT. The gap between these two settings was identified in the literature (Caplan, 1979; Weiss, 1976) and is a source of frequent misunderstandings. Group processes tend to blur the boundaries between these two worlds, allowing links to be built between both.

The request of the GATTEL for an early involvement in the process gave the impression to the LPN that this was going to be a model case, where for the first time environmental information was going to be considered. This was one of the reasons why the environmental activists only became involved much later. Anyway, some of the LPN members disagreed and showed suspicion. This is revealed in the fact the LPN members did not want to make an EIA, though there was also another more technical explanation. The professionals of the LPN, particularly the biologists, considered impossible to make a sound study in such a short period, since monitoring life cycles requires usually more than one year. For some time everything seemed to be going in the right direction in the view of the environmentalist. By the beginning of September/October 1991 the members of the LPN board realized the situation was getting out of control. According to one interviewee:

"the process was escaping from our hands."

The same interviewee added

> "I never had great illusions on the LPN participation. I always believed that it was going to be a mascarade, but after a certain point it became completely obvious to everybody that it was going to be just that."

By end of 1991 there were rumors in the press of the preference of the Minister of Public Works for the *Montijo* corridor and afterwards appeared the public announcement that the choice was contrary to the LPN position.

The technical information[14] available at this point was scarce. In particular, the GATTEL documents were not widely distributed. This is confirmed by an environmentalist who said

> "At this point, the publicly available information was scarce, Document 6 of the GATTEL was the only available and everything else, even when available for consultation, was very restricted (e.g., xeroxing the documents was not allowed) or obtained with great difficulty by the back door."

The environmentalists complained that they could only get most of the information after the decision and due to a lot of efforts and persistency from their part. This seemed contradictory to the openness of the process led by the GPT, but it is not so. Several GATTEL documents circulated among the municipalities and among a group of professionals more directly involved in developing studies for the GATTEL. However, since only one environmental association just hardly participated in the process, the environmentalists did not generally have access to these sources. Later on, the environmental associations put together a substantial amount of information and distributed it widely. This exposure of information contributed to the increase of openness of the phase that followed the decision, already at a time when the GPT had stopped operating. The environmental associations assumed a crucial role in the dissemination of this information.

The actions taken by the environmentalists enhanced the use of information. Convinced that under the environmental point of view *Montijo* was the most undesirable solution of the

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[14] Refers to formal technical information --- reports.

three considered, environmentalists took action trying to reverse the decision. They worked with the media (preparing opinion articles and supplying information on the environmental issues), they recurred to the national courts (for the first time a complaint was filed to the Supreme Administrative Court against the Portuguese government by an environmental association), they complained to an international court (European Court), they lobbied (contacts with high rank politicians to express their concerns), they developed joint efforts (got together and produced a joint publication on the bridge, gave joint press conferences), they coordinated efforts (identified and distributed tasks among them to take the most advantage of their short resources), they consulted each other (when taking a stand), organized debates (with the President of Portugal and professionals), visited the future bridge site with several entities to call public attention to the issue, and organized mobilization actions (one hour 'honking' during two days against the signing of the building contract, street flyers). During these actions they worked closely with members of the government, with the professional community, with members of the European Union, with activists of international environmental NGOs, with elements of other interest associations, with the journalists and with the public in general. In sum, they projected their image to wider audiences. This had its consequences. It established a vast networking that proved to be very useful to the environmentalists activities.

Information was used and reframed, and more elaborated knowledge was created. The persistence of the environmental association in this case, the outreach to a wider community and the articulated actions contributed to a disseminating of information of an unusual scale. The consequences of all this activity assumed proportions unforeseen at the beginning of the process.

Information was used in the meetings with high rank politicians (the President of Portugal, several ministers, leaders of the political parties). These meetings followed similar patterns. Environmental association members provided information, expressed their concerns (e.g., about irregularities of the process) and requested intervention. Environmentalists also used any opportunity to bring up the case of the bridge when meeting about other environmental issues. According to the interviewees, not much visible change came out of the political development of contacts. However, they had a more subtle influence. The contacts with politicians helped to build the credibility environmentalists gained afterwards, a "greater respect by the government". In fact, after the bridge issue, some governmental officials consulted the environmental associations on several environmentally controversial issues prior to make a decision (e.g., location of hazard waste incinerators).

Environmentalists disseminated a lot of information by giving press conferences and producing a considerable amount of opinion articles and papers in the media. When preparing the opinion articles for newspapers or supplying information to journalists about the issue of the bridge, the environmentalists extensively used information. As one of them confirmed, a lot

of that information came from the GATTEL documents, though they had to force the government to make available part of this information by appealing to the legislation that assures public access to documents. Environmentalists saw the contacts with journalists as very positive. It was a good vehicle to expose publicly the information. The environmental NGOs established, along the process, a network with the media that was useful for other environmental issues. One of the environmentalists interviewed stated that one positive outcome of this process was that journalists had the opportunity to establish privileged access to professionals of the environment. This, he said, influenced the quality and accuracy of environmental information coming out in the media.

The environmental associations were one of the main groups that contributed to the public exposure of technical information that frequently stays indoors. This influenced a wider constituency and reached the general public. The exposure to this information partially explains the strong public involvement in the bridge blockage when the toll fare issue appeared. By discussing the information appearing in the media or obtained from the public administration or through interest associations, the bridge users developed the idea that the future bridge did not serve them. Therefore, they were not willing to pay for a service they did not get. The use of information also explains the creation of the 25 th of April Bridge Users Association, because data was important to back up the positions of people. Since the users were organized around an issue — the toll fare increase — without information they did not have a stand.

The environmentalists relied heavily on the use of information to support their actions. Since they operate on limited resources they had to made the most of it. Recognizing their limited human and financial resources, the environmental associations decided to join efforts. Among other things, they created a team operated as a group process to assemble, structure and debate the information on the new crossing, to develop proposals, and to produce a publication for diffusion. This group met, put information together and developed new crossing options (e.g., it proposed an only train crossing in the *Barreiro* corridor). It is this information that is later assembled in a joint publication and distributed to the media and the public. This joint venture influenced the environmental associations' way of operating. Their strategy was altered. It became usual for them to consult among each other when a new environmental issue came up.

Nowadays, the environmental associations rely on informal consultation among them to adjust strategies or to raise awareness on issues brought to the table. This is only possible because they learned to work together during the bridge process and, while doing it, they built trust. On the basis of this trust, they often informally shared tasks to take the most advantage of their few resources. Moreover, they also became more effective in the selection of issues. As one leader explained, "now we changed the strategy": instead of grabbing all the environmental issues under way and have dispersed interventions that could not be effectively pursued for a

long period of time, they are more selective in the issues they got involved and when they pick up one they take it until the end. They also learned a lot about their rights and about the legislation that provides support to their actions (namely the access to information).

Information was assembled, structured and made explicit in the various complaints filed by the environmental associations to the Portuguese and European courts. In times of controversy and when there are residual conflicts that are not resolved in the existing forums and arenas, people may recur to the courts. In this case, it happened. For the first time in history, an environmental association filed a complaint to the Portuguese Administrative Court against the government, intending to force the political setting to comply with the new environmental rules. Several other complaints followed this one to the Portuguese and the European courts (e.g., disagreement about the right phase to conduct the EIA, infringement of legislation). For each complaint the environmental associations assembled information to support their views and, while doing that, they revised it and produced new one (e.g., the analysis of data on boat activity to check if the material from the river dredged was being deposited in the agreed place). But what is important here is that information was used because of the need to structure it to support the complaints. Some of this had further consequences. The case of the bridge location over the Tagus was ultimately thrown to the headlines of the environmentalists concerns about the intervention of European funds in constructions with negative effects on the natural systems.

This is the case of the complaint dealing with the non compliance of the Portuguese Government with the Special Protection Area boundaries. It resulted in compensatory measures. As an environmentalist stated

> "the compensation measures were a direct consequence of the complaint submitted, because they were imposed by the EU. It is a pitty that this did not happen without the complaint."

At a wider level is the case of the information supplied by the environmentalists to the Wild World Fund which became part of a report of this organization. The Tagus new bridge case was selected as one of the reference case studies in a recent assessment "of the implications for biodiversity, both positive and negative, of the European Union Structural Funds in the period up to 1999 and beyond"[15]. The report states:

> "Recent decisions in the cases of 20 motorways in Germany and the Tagus bridge in Portugal gave cause for serious concern about the willingness of the EU Commission and Member States to uphold EU environmental law firmly throughout the EU."[16]

Moreover, a report of the Wild World Fund criticizes the European Cohesion Fund allocation, using the Tagus bridge case as a reference, adding an annex with a list of violations to its Impact Study. As one of the environmental leaders stated,

> "the bridge case begins emerging (internationally) as an example of wrong application of European funds."

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15 Birdlife International. The Structural Funds and Biodiversity Conservation. Sept 1995.

16 *idem*, pp5 of Summary and Recommendations.

It was the information that supported the environmentalists complaints that threw the bridge case to the EU documents headlines. A working group recently created within the Budget Control Committee (BCC) of the European Cohesion Fund analyzed the application of the funds in the several countries (Spain, Greece, Portugal and Ireland). In a recent meeting of the BCC the reporter attacked the EU Commission and the governments of several countries because the funds were being wrongly applied. This report, still in internal circulation, has to follow the usual channels through the Plenary and the European Commission and will only afterwards become public. What this shows is that information made a difference. It is the existence of a substantial amount of information and its wide exposure to support the complaints that makes it to be used by the EU to question the appropriateness of fund application.

The environmentalists learned to operate in new settings and to use information as a way to be listened to. While interacting with the European setting (EU agencies and European Courts) the environmentalists learned how to operate in European instances. More, they also established networks with international associations members, which revealed to be useful for consulting later on. Keeping these peers informed made a difference.

All the conflict on the new bridge location and the projection of information beyond the country boundaries had consequences initially unforeseen. At the European level the question of the Cohesion Funds application in the construction works harming the environment is drawing increased attention. The European Commissioner for the Environment has visited Lisbon since then and held talks with high rank politicians expressing her concerns. The bridge case created a precedent that will influence the national government in fully interpreting the environmental component in future processes on issues of location of big infrastructures.

CONVERGENCE OF PROBLEM DEFINITION

The convergence of professionals, politicians and interest organizations to a common model of development for the Lisbon Metropolitan Area provided the conditions to articulate the several group processes emerging in the issue of the new bridge location. More, the intensive networking produced among the professional community while they were exchanging information contributed to the exchange of ideas and an adjustment of the views of the people interested in the new crossing location. Several groups organized shorter or longer group processes. However, these processes worked in contained forums without an overall coordination. These forums (e.g., GPT, environmental associations), mostly involving professionals, required information to operate. Moreover, players of these forums started to know, through either the media or informal contacts, that there were other groups trying to assemble information to defend positions. This was the departure point for intensive networking to exchange information. While doing it the players discussed ideas, data and

positions. This interaction had a strong influence in shaping the evolution of this process. Since the GATTEL integrated information from different components and the *Barreiro* option was a creation coming out of that integration, fitting better the agreed model of development for the region, these groups converged in the same direction.

SIMPLE IMAGES LOADED WITH COMPLEXITY

This high level of understanding of the interrelated factors made possible the translation of complex issues into very simple ideas. While debating the location of the new crossing over the Tagus, professionals used information. They analyzed data through their views, put information in the light of the problem and reframed the issue to better respond to their expectations. Information which was worked on that way gained powerful meaning and its understanding became part of the intellectual capital shared by a growing number of participants in the overall debate. Because they understood the information, they translated it into short and illuminated imagery statements. These statements reflected a substantial amount of knowledge (e.g., history, views, expectations, models). They became appealing ideas extensively used during the debate. These ideas, translating complex issues into a simple form, resulted from discussions going on among specialists. Such constructed arguments acquired powerful meaning as a result of discussions. More, it was the level of understanding attained by the integration of interrelated factors that enabled participants to produce such powerful images (e.g., connecting urban space to rural land, bridge as an opportunity, bridge as a tool of recovery, progress, one bank *vs* two banks town, closing the traffic ring, new poles of development *vs* sustainable development of infrastructured areas, reknitting the urban issue). These images became important devices for triggering action and for supporting it afterwards. As one of interviewees put it:

> "The decision is influenced by images that individuals or groups have, by the participants environmental perception, and by administrative structure and political will. Without power it is not possible to reach a decision." (transportation planner)

A selection of the arguments and images that gained greatest expression in the debates among the participants is given below with a short description of the main underlying assumptions drawn during the debates on the new crossing. What I want to highlight here is that there is a whole logic behind the debate carried on among professionals when discussing the location of the new crossing over the Tagus, and that logic is supported by the views of the different type of participants, by the knowledge going around and by the need to reframe the problem.

Connecting urban space to rural lands

One of the deepest concerns among professionals was that a connection between an urban and rural area would produce serious urban sprawl. The professionals saw as undesirable the

additional development pressure created by making a rural territory easily accessible with a potential for chaotic growth. For a long time, specialists discussed the connections between the North urban bank and the rural South. These discussions became more intense after the construction of the 25th of April Bridge when people observed the real effects of the new bridge to the Peninsula of *Setúbal*. These effects deserved several studies and became a permanent concern among specialists. These concerns were usually expressed by planners who did not want uncontrolled development and urban sprawl due to new accessibility, and by environmentalists who believed that the increased accesibility would cause irreversible damage on more natural systems. Several statements illustrated this. An environmentalist willing to preserve the rural balance achieved in the course of 800 years, commented:

> "In our reality it is very important to be aware that we have an 800 years old rural space — which achieved the balance of experience." (Environmental NGO member)

A transportation planner who was identifying the best location for the bridge South anchorage stated:

> "In the Southern bank there is a waterfront arch between *Montijo* and *Almada* — an urban continua — oscillating between semi rural fields and the full urban areas." (transportation planner)

An urban planner who learned from previous experience explained:

> "Having studied the impact of the 25th of April Bridge (I think) by extrapolation that *Montijo* is going to have a very similar behavior. A very negative impact, bad to the Metropolitan Area. With the bridge over the Tagus there was a Southern growth due to an increase in accessibility. Big fronts of development oppened during the construction of the bridge. With the new connection axis the areas open to development were densified" (urban planner)

An urban planner dismissing the *Montijo* option because of its potential for urban sprawl said:

> "With the appearance of this alternative (*Barreiro*) it became clear that *Montijo* could not be the solution, because it generates urban sprawl" (urban planner)

A NGO member concerned with possible changes induced by a new bridge in *Montijo* stated:

> "I am sensitive to the environment. My father's family is from *Alcochete*. For me a bridge in *Montijo* will never be the most advisable due to the environmental impacts. The development is going to alter the characteristics of the area." (NGO member)

This was not the view of people from the municipalities of *Alcochete* and *Montijo* who had seen the opportunity of a direct connection to the capital vanishing when the 25 th of April Bridge was constructed twenty years ago. The new possibility of having a bridge in *Montijo* was a long awaited opportunity that they were unwilling to miss.

Bridge as an opportunity

The new bridge as an opportunity was another powerful idea advanced during the process. The more peripheral Southern municipalities, eager to achieve a greater integration in the metropolitan area, saw the new bridge as an opportunity to achieve development, to escape their peripheral status and to become better connected to the capital. This is particularly

important in the case of the municipalities of *Montijo* and *Alcochete* which had lost the chance to be connected to the capital when the government decided to locate the first bridge away from their territory. They have been waiting since then for a second opportunity and now it was there:

> "All the people that live in this region (South bank) feel the urgent need of a new crossing." (municipal official)
>
> "*Montijo* sees the bridge on its grounds as a promotion." (urban planner)
>
> "as you know, it does not happen if we do not grab the opportunity and at this moment the opportunity is the bridge (in *Montijo*)." (municipal technician)

Behind the notion of opportunity was the concept of progress seen differently by the various participants.

Economic progress

Progress was a contested idea. Municipal technicians and politicians working in the more rural municipalities of the metropolitan area saw growth as progress.

> "A new bridge over the Tagus river is absolutely essential for the economic development. We think that with the new bridge we get integrated in the AML, our resources can be available for the AML to be used. It is now difficult to go to Lisbon to study and work, industries have difficulties in locating in our municipality." (municipal official)
>
> "The construction of the bridge in *Montijo* creates the possibility to develop the tertiary, today with a 20 % (share). Before, (the economy) was essentially based in the primary and secondary (sectors)." (municipal technician)

Environmentalists contested this notion calling it a "false idea of progress":

> "The other important issue is the "false idea of progress" brought along — a growth without limitation, the interest in producing products, the destruction of cultural diversification. The urban expansion is carried on because the rural value is destructed in the behalf of the monoculture. There is an interesting thing. The progress is badly interpreted. There is a symbology of the progress and it is that what the populations have in their heads ... high rise buildings with 7 to 8 floors in rural areas. Progress is associated with roads, big highways, big dimensions." (environmental NGO member)

However, this was not so simple. Discussions initiated already about the Land Use Plan for the Metropolitan Area brought to the table the need for a decision between the option of a one bank or a two banks town and the evolution of outcomes on those grounds.

One bank *vs* two banks town

The issue of a one bank *vs*. a two banks town gained also strong expression in the professional debates. The option for a one bank town implied no more bridges connecting both banks. This was the initial position of the coordinator of the Land Use Plan of the Metropolitan Area, who was unwilling to have more bridges across the Tagus estuary. One of the interviewees stated:

> "Initially, the PROTAML did not accept the bridge in *Montijo*." (municipal technician)

The option of a two banks town opened the discussion on the best alternative. It was seen as an integrator of the whole metropolis. Urban planners thought the metropolitan area needed an integrated solution, in the light of the model of development wanted for the region. Considering the two banks town as the right choice, they thought the *Barreiro* option was the priority since it fitted better the model by making both banks operating as a whole. It also brought the opportunity for establishing a continuous urban space going from one bank to the other.

> "To make a decision on the location of the bridge it is essential to discuss and reach a consensus on a key issue: if the town is going to be a two banks town, and therefore the strategies should aim to the improvement of interaction between the two banks, through tunnels, bridges etc., or if each one of the banks should develop more or less independently, assuming distinct and different functions." (transportation planner)

The structuring of the debates around this idea gained substantial supporters and was mentioned by people interviewed. Behind this are the assumptions of the model of development for the metropolitan area, further discussed below. In fact, the decision between the bridge in *Montijo* or *Barreiro* shifts the whole discussion to two models of development defended by different generations of planners.

Two generations of planners -- two models of development (poles of development *vs* sustainable development of infrastructured space)

The two urban models of development defended reflect the views of two generations of planners — one seeking the decentralization of the urban space through the creation of controlled poles of development, and another embracing the new concepts of sustainable development in the already infrastructured areas.

> "There were discussions, but I think that the positions became extreme very early in the process, because they represent completely different logics. The persons with a perspective of urban and regional planning divided into two positions, according to the generation they belong to." (municipal technician and transportation planner)

> "The older people, formed in the planning style of the 60's, think that the bridge in *Montijo* is a great opportunity to create a new town there and decompress the Metropolitan Area. It is the philosophy of *St. André* relative to *Sines*, of the old plans of the Housing Development Fund[17], to create towns to decompress, the theory of poles of development." (municipal technician and transportation planner)

> "To admit that the solution is this or that has assumptions essential to its accomplishment." (municipal technician and transportation planner)

Therefore, some planners argued that to decongest the town it was necessary to create new poles of development away from the existing centers to absorb growth and operate with self sufficiency. Other planners, concerned with sustainability and containment of growth, and seeking to avoid new fronts, defended the occupation of the still unoccupied spaces within the urban area: the reknitting of the urban tissue.

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17 FFH, Fundo de Fomento da Habitação.

Closing the traffic ring

The traffic engineers supported the first group of planners. Their views were framed by the mission of supplying good national traffic mobility. They wanted to close the ring around the urban area. For them the issue was the construction of a speedway to assure car mobility. They wanted to make sure to have a good flow. Looking at their tradition of operation their main objective is the shortest, least costly connection between two points (urban areas) and preferably with no ways out along the way. Therefore, they favored traffic kept on the edges of the urban area. They wanted a connection as peripheral as possible, which would also allow for the closure of a Lisbon circular involving both banks of the Tagus.

> "The traffic engineers rationale was to close the ring." (transportation planner)

Rekniting the urban tissue

The second type of planners concerned with sustainability had a different stand. The reknitting of the urban tissue is strongly connected to the idea of "false congestion". Some interviewees are convinced that part of the urban planners think that the urban space in the metropolitan area is totally filled up and does not have empty spaces for further development. These interviewees claim that the urban space is not fully occupied and that it allows for the filling in of some empty spaces and for a greater densification, taking advantage of the infrastructures already available.

> "This goes against our urban planners who consider that the whole space is very congested. They confuse lack of organization with high rate of occupation, which in real terms does not exist. Inside Lisbon the backyards are unoccupied. These are areas to order and occupy." (PROTAML team member)

As planners became concerned with containing development and redirecting it to already infrastructured areas, they analyzed in greater detail the urban spaces and found that there were unoccupied spaces in that urban tissue that could be filled in. A key concern to avoid new fronts of development put them in close agreement with the environmentalists.

> "*Montijo* is out of all this. With the highway to *Cascais* and the highway to *Loures*, new fronts of development are open for a period already declining (demographically). With so many fronts (already) open, the opening of new fronts is undesirable. In the Peninsula (of *Setúbal*) we have already highly unqualified space. Therefore it is necessary to qualify what we already have." (urban planner)

> "The Land Use model reached by the PROTAML team was one to avoid the continuous and disorderly expansion of the territory and to reconcentrate the occupied land, reknit the tissue and restructure the occupied land. There is no need for expansion. It is necessary to use the already occupied space" (PROTAML team member)

The *Barreiro* option fitted this second model. It could bring important changes, fulfilling some planners' expectations. One was the recovering of two declining areas (*Chelas* in the

North and *Barreiro* in the South). The other was the creation of a central function continuum involving both banks.

Bridge as a tool of recovery

This idea gained considerable supporters and had a strong influence in changing the views of several professionals. The bridge in *Barreiro* was seen as a possible tool of recovery for seriously declining areas, due to the increase in accessibility it provided.

> "The bridge is seen as a tool of recovery." (environmental NGO member)
>
> "*Barreiro* is dying. The central corridor would allow for the urban recovery, of an area in strong depression and with gradually less potential to attract interests. Not providing accessibility to it (*Barreiro*) is only going to make the situation worse." (urban planner)
>
> "The problem that the bridge should address is the revitalization of the declining areas, since *Barreiro* already has adequate infrastructures." (environmental NGO member)

Barreiro as part of a central area

Since the urban planners knew that *Barreiro* had some central area characteristics, they saw in the *Barreiro* crossing a possibility to connect two central areas. In this way, the central area could be extended from Lisbon downtown to the South bank in *Barreiro*, making a continuous encompassing both banks of the Tagus. The possibility to recover *Barreiro* by connecting it to the central area in Lisbon reinforces the idea of recovery expressed above.

> "In the urban hierarchy, in the South bank, the *Barreiro* can with *Almada* assume an important role of central area." (municipal technician)
>
> "*Barreiro* is a municipality that has seen the production of its heavy industry decline ... It has a very important commercial center. For example, it has two Benneton shops. This center, if connected to the core of Lisbon, could operate as an extension of the Lisbon downtown commercial center. Recently, it (*Barreiro*) is more and more a suburb of Lisbon." (transportation planner)

Furthermore, it is also this option that is appealing to environmentalists because it keeps away the bridge from the sensitive natural areas.

Need for new institutions

During the decision process of the new location of the bridge, institutions introduced new ways of operating (e.g., the GATTEL Planning Team) and others (e.g., environmental associations) reformulated their previous operation ways. This shows that even existing institutions are searching for new more flexible ways to operate. This need was partially imposed by the complexity of the problem at stake that required the integration of a multitude of factors and actors. More, the EU requirements (introducing the environmental component, access to information and assured participation), being transferred to the Portuguese legislation, contributed to the implementation of the new rules in Portuguese settings. This is

particularly important in a country with a bureaucratic system that does not have mechanisms for interaction with the common citizen.

When there are no mechanisms for people to intervene in the process and these people feel they are not being heard, they get mobilized, they create social pressure, they search for empowerment and develop their own institutions to fill in the gap.

> "There was a group out of the process. We are still learning how to institutionalize participation. The processes are carried out more by habits and tradition than through institutionalization." (environmental NGO member)

The controversy generated by the debate over the issue on the location of the crossing of the Tagus revealed a need for interaction with the public administration felt by some groups left out of the process. Two institutions were created, at different times and due to distinct reasons for assuming such interaction. The *Montijo* and *Alcochete* Association for Defense of the Quality of Life (AMA) supported the location of the bridge in *Montijo*. Their members wanted to sit in the GATTEL Advisory Committee and knew that to play by the rules they had to be recognized as a social partner, i.e., be legalized. Later on this association expanded its functions and assumed a wider role: the assurance of the quality of life of *Montijo* and *Allcochete* residents. The 25th April Bridge Users Association resulted from merging two associations (one in each river bank) created in the day of the bridge blockage to fight the toll fare increase. These interest associations were formed by people that would not have a chance to be heard otherwise. Even though they were legalized as interest group organizations, and, therefore, recognized as social partners, the chance to dialogue with the government was limited. Still today, the bureaucracies mostly consider as dialoguing partners the public entities (see the composition of the GATTEL Advisory Board that includes only entities from the public administration)[18].

The great number of people involved in the 25th of April Bridge blockage resulted from the use of information by the public in general. It was the knowledge people built during the whole debate about the location of the new bridge, mostly conveyed by the media, that made them realize that they were going to pay for a service (the new bridge in *Montijo*) that they were not going to use. It was the self confidence that information gave to these people and the awareness that the new bridge was not going to solve their problem, that provided them with a common stand for action. They felt they had the legitimacy to assert their rights. Revolted by the injustice that information had shown and frustrated for not being heard, they carried out the blockage. It was an extreme situation because environmental activists had organized several actions before to call governmental attention and received no reaction. As stated by one of the Southern residents, "the fights were to force the Government to talk with us".

What seemed to be at stake was the power to demand a hearing. The feeling that their interests were not being taken into account, a perception of injustice. Moreover, the media

[18] Dispatches of the Ministry of Public Works (MOPTC) in 1991 and 1994 (47/MOPTC/91 and 49-XII/94).

played an important role in diffusing information to a larger audience. People protesting did not have institutions to rely on, and the central administration was deaf to them. If we do not want this to be repeated we have to rethink our institutions. The present institutions are not responding to the needs of our citizens.

One of the members of the 25th of April Bridge Users Association, describing these actions, explained that the members of the association set working teams. One of the main tasks in their agenda was the development of contacts to talk with the government. Their objective was to present their case directly to governmental officials. They also sought to construct an image of the association in the media through a press conference and interviews given by the association leaders, and to become legally recognized "because they had to get organized", as the same member explained. But the most interesting feature of this new association is its internal organization, which shows creativity, flexibility and a flat hierarchy avoiding reliance on a single leader. Internally, they decided to rotate leadership assuring everybody equal power, what one of its members called "assuring equity of intervention" through recognition of their work as members, "not in terms of image but of recognition". By rotating the leadership they wanted to avoid having a too powerful leader. This also assured the flexibility and continuity of the organization, because it did not depend on only one person. Besides, the procedure provided several members with the skills to assume leadership whenever necessary.

I mentioned here the case of two associations developed to fill in a gap perceived by the citizens as a direct consequence of their understanding of the situation, due to information that circulated. New institutions may emerge when existing mechanisms, like the public administration, are unsatisfactory to the growing public need to get more directly involved in public decisions. People put greater pressure on governments when decisions affecting them are at stake. They want to be heard and to be able to influence the outcome. In this case, if information had not circulated before, the influence on the public administrtion could not be sought, or the public reaction would have taken a much longer time. At the blockage, people shared already a common stand and were ready to act on it.

The two associations appeared because people felt a need to be heard. Once operating, these associations used information they got from the public agencies, from the media and from other associations. This information was assembled by their members and circulated among them. It was used to support the members views inside and outside the organization. While doing this they debated the information and used it to support their arguments. They also began publishing flyers and newsletters to circulate the information and their views.

Learning to defend the rights

Information favored the creation of more interactive processes. Data provided clarity to a complex ambiguous situation and helped the participants. This gave them self confidence and an eagerness to intervene. As one environmentalist said:

> "The Portuguese public is not used to being influential in the decision, they do not feel they have rights ... They still have a certain fatalism, therefore when the government makes a decision they consider it irreversible."

The experience with the issue of the location of the bridge has changed the way the Portuguese citizens perceive their role in the public processes. There is room for change in the way these processes are set up and to integrate some new ideas. The creation of new associations and the restructuring of associations that already existed partially show this.

Despite the general feeling of powerlessness among professionals who consider that decisions are merely political, things will never operate in the same way. There is a growing awareness among individuals of their rights and a greater energy in expressing them. The administration respects more the views of technicians and activists than when the GATTEL started. Government and participants also understand better the way these processes operate and there clearly is a growing informal exchange of information among professionals, activists, public officials and media personnel. Part of it resulted from the expanded networking created during the location of the bridge process.

CHAPTER VI

FINAL CONSIDERATIONS

In sum, this case shows that information used in interactive settings created powerful meaning. This resulted from a mixture of innovative features. Part of them came from the GATTEL contribution, namely the private imprint brought to the GATTEL by its president, the way of operation of the GATTEL Planning Team, the new methodology for the assessment of the best location for the new bridge, and the introdution of the environmental component at early stages of the process.

All this favored the development of a context rich in information use and created the grounds for the generation of an unexpected option seen with great potential by the participants. The opportunity to put information together in the light of the problem under consideration (the best location for the future bridge) made a difference. The new solution brokes a long standing consensus and brought to the process substantial controversy after a divergent choice by the Minister of Public Works.

It was the use of information and the meaning acquired by that information, particularly within the technical community, translated in illuminated imagery statements that influenced the changes in the players views and widened the debate. New actors coming to the process used, reformulated and generated new information. While doing this they reviewed their way of operation, and strategies, and widened their working settings. It is information and the need of greater involvement felt by excluded citizens that influenced the emergence of new institutions.

The numerous forums created by stakeholders during the long controversy, though without any formal horizontal coordination converged in its results due to a shared model of development for the metropolitan area of Lisbon.

INFORMATION TRIGGERS ACTION

The use of information triggers action. While providing support for arguments it supplies the necessary ingredients for people to make a stand with self assurance. Once this happens people feel part of the process and may initiate action to redirect it. They frequently have to revise ways of operation or to reformulate strategies. Much of this is done in interaction with other people. It is this interaction that makes a difference. It assures the subsequent exchange of information and ideas that makes the process richer, frequently contributing to increasing its complexity by bringing a large number of interests and factors (e.g., environment, urban component) into consideration.

I argue that information was used in this case, not in the restricted logic of supporting the final decision, but in a more general way constituting a basis for action. Actually, information was used by politicians, professionals, members of environmental associations, and people in general when getting involved in action:

- to support new proposals
- to motivate people to get organized because with a better knowledge of the issue they could take a stand
- to generate new knowledge
- to see the issue differently (e.g., the unexpected alternative)
- to provoke debate
- to challenge a decision
- to reframe the problem / to generate new ways of seeing the problem
- to generate new alternatives (just a train bridge in the central corridor, two parallel train and road bridges)
- to construct innovative joint processes (environmental joint working group, commuters interest group that resulted from merging two simultaneously created associations with the same objective, the *Alcochete* and *Montijo* Association for Defense of the Quality of Life (AMA), joint press conferences, articulated actions)
- to file judicial complaints (Portuguese administrative courts, EU instances).

The dissidents desire to propose new alternatives as a result of their disagreement over solutions, particularly the environmentalists, made people look for supporting data in existing studies, frequently recurring to the GATTEL documents. The radicalization of positions and the awareness of resources scarcity contributed to the emergence of joint efforts (joint studying group and publication) and led to the creation of new entities (e.g., AMA).

INTERACTIVE PROCESSES

This study shows that information was used by influencing people's views. Most of the changes could not have happened without the interaction, through group processes or networking. Though the process considered here was complex and no coordination existed among the different group processes operating during the debate, the fact that participants developed a shared convergent idea — the model of development for the metropolitan area — and participated in a strong network partially compensated the lack of coordination. The shared idea for the AML and the strong networking among participants channeled the work of professional community members in the same direction.

The decision process for the location of the new bridge over the Tagus was a learning process for many people. Government, professionals, activists and journalists learned that there is a changing society, more outspoken and with an increased power of organization, that wants to be heard. Moreover, they also realized there are complex problems that may seem to have a single clear cut solution at the beginning and may need reformulation afterwards. This suggests the need to assure the conditions for such problem reframing to happen.

When considering these types of complex issues one must allow professionals with different expertise to meet and debate the information, to collect it, to have room to develop meaning and, if necessary, to reframe the issue. I do not mean that all problems need group processes to achieve agreement. There are problems that might have more clear cut solutions. But in 'wicked' problems it is important to understand that initially defined solutions may be revised after putting the information in the light of a new problem frame. These are problems of difficult definition. Therefore, the emphasis has to be directed to a consensual framing of the problem.

In a changing world of politics, the use of information needs to be seen in a different perspective. It becomes powerful in a new society where environmental issues and a growing

technology use set the grounds to overcome national boundaries. What made this case so influential was

"the power of the flows (in the networks) rather than the flows of power "[1]

We are entering the information society. In this new world empowerment is not so much built on the traditional forms of legitimacy but on the efficiency of the flow of information established in developing networks.

Further studies are needed to study these new settings favoring the emergence of new more flexible institutions and the better understanding of how they can be positively interrelated with the existing bureaucracy and of what is the role information plays in the process.

Interactive processes, either group processes or networking, when meeting certain conditions, have the ability to be creative and generate change. They constitute a key resource to address complex problems with no unique answer and involving numerous interests, because these processes allow for the integration of information from different sectors and varied sources, in the light of a specific issue. If these groups are allowed to operate with autonomy, to include the key stakeholders and to use information, they may bring creative solutions to the problems at stake and become an important support for the policy maker. The policy maker, however, will have to be more adaptive as these groups are likely to challenge accepted knowledge. Knowing more how they operate and about the factors that make them successful is important for setting these groups and for taking advantage of their operation.

There has been a lot of study about interactive processes, but since each situation is so specific there is limited theorizing about it. This dissertation represents a contribution for theory building about the use of information by groups, but more cases have to be studied and compared to make broader generalizations. An important part to explore is how bureaucracies can be articulated with newly created institutions, since they work with rules very different from those of interactive processes. What type of procedures can lead bureaucracies to absorb the outputs of these more flexible institutions? Merging the outputs of both operations for a common good will bring better solutions.

The established bureaucracies often regard the interactive group processes with suspicion. One of the reasons is that bureaucracies are unwilling to share their power with others. However, some cases already proved otherwise. The Mayor of Seattle, who had established a

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[1] Manuel Castells - address on The Network Society, U.C. Berkeley, December 2, 1996

sound interactive planning process, was reelected though his party did not receive the confidence of the voters in the second term. A similar case happened in *Évora,* where the Mayor who had initiated an interactive planning process with the local stakeholders, gathered substantial public support, despite his party's declining votes. These cases show that the confidence built up with the involvement of wider constituencies had more political benefits than the drawbacks of sharing power. These are cases that should be studied to provide better insights into the way to operate in the future in a world where power has become fragmented and more interests inevitably become part of public decision processes.

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Appendix I

Interview Guideline

Nível de envolvimento/ Papel

Historial do processo

Envolvido

Funções

Estrutura organizativa

Funcionamento

Frequência das reuniões

Elementos envolvidos nas reuniões: técnicos do GATTEL, do exterior, CMs...

Havia ligações com o PROTALM, ou CCR em geral?

Os resultados eram discutidos nas reuniões?

Oralmente? Distribuidos antes em forma escrita?

Com a ajuda de elementos visuais? (slides, mapas, gráficos, etc.)

Havia relatórios regulares? Distribuidos a todos os envolvidos?

Existe algum material escrito do processo, além dos relatórios públicos do GATTEL?

(Doc 1 - Identificação Preliminar dos Corredores a Estudar - Abril 91

Doc 4 - Avaliação dos corredores - identificação e avaliação de efeitos Sept 91

Doc 5 - Apresentação dos traçados - Julho 91

Doc 6 - Avaliação dos corredores - Conclusões e recomendações (1° fase) Sept 91)

Processo

Tinha tido alguma experiência de envolvimento neste tipo decisões públicas/ localização?

É a primeira vez que está envolvido num caso destes?

Ou em casos afins?

Acha que este processo foi diferente dos outros em que esteve envolvido?

Porquê? Em que aspectos específicos?

Como compara este processo com outros do seu conhecimento e envolvimento?

Como é que este se diferencia da sua experiência anterior?

Como é que se diferencia da forma usual de funcionamento?

Reuniões

Quando é que foi envolvido no processo? Especificamente quando é que começou a ter reuniões?

Com a equipa técnica? Com os elementos da comissão instaladora?

Qual era a frequência?

Elementos presentes nas reuniões: representante de todos ministros sempre presentes (duma foram geral), ou alguns mais em permanência que outros, ou convocados de acordo com o tópico

ORGANIGRAMA DE COMPETÊNCIAS

As reuniões foram úteis durante o processo?

Porque diz isso?

Quais eram os assuntos importantes discutidos e debatidos?

Factos? Opiniões?

Acha que me pode dar um exemplo?

Aspectos técnicos...

reuniões/ informação

Houve casos em que informação que lhe não parecia importante (crucial) foi considerada e usada? Como? Exemplo concreto.

Porque é que achava que não era relevante?

Argumentou na ocasião? Usou factos? Quais?

Pensa que os outros elementos presentes o compreenderam?

Quais terão sido os argumentos mais eficazes?

Trabalho de grupo

Esteve de alguma forma envolvido com o trabalho de grupo?

Apenas com um elemento específico?

O que pensa do trabalho de grupo?

(em comparação com outros grupos técnicos em que tenha trabalhado)

Leu os relatórios?

Pensa que existe algum aspecto crucial que não foi contemplado?

Gestão do processo de grupo

Vários subgrupos?

Qual era a função específica do grupo técnico?

Como era o funcionamento?

Actores chave

As agências relevantes foram envolvidas no processo?

Como era esse envolvimento? (revisão de relatórios, pareceres, reuniões ?)

Foi alguma delas deixada fora do processo?

Porquê?

O que o faz pensar que era um interveniente importante?

Fez diferença não ter esse interveniente envolvido?

Objectivos

Qual foi a missão inicial que lhe atribuiram? Isso mudou?

Porquê?

Existiram mais que um objectivo? Qual deles lhe parece mais importante?

Problema

Qual é o problema que a ponte vai resolver?

Duma perspectiva técnica como é que vê o problema? (solução de tráfego, desenvolvimento, ligação N-S, congestão)

Porque é que isso é um problema?

Os outros viam o problema da mesma forma?

O problema foi discutido durante o processo? Especifique.

O grupo pensou longamente sobre o problema? Argumentaram como?

Consegue-se resolver mais de um problema com uma única alternativa? Como?

Quando começou a trabalhar no processo o grupo estava já a tratar um problema específico? Qual? Como?

Ideia pre-existente

Houve pessoas que me disseram que a localização no Montijo era uma ideia muito forte e que grande parte veio com essa ideia para o processo? Acha que isto é verdade? Porquê?

Opinião

Entrou no processo já com uma opinião acerca da localização?
Posso saber qual?
Mudou de opinião durante o processo? Porquê?
Houve factos e argumentos que o fizeram mudar de opinião?

Grupo

No início o grupo tinha uma opinião especifica? Como é que evoluiu ao longo do processo?
O que fez o grupo alterar a opinião, ou manter a opinião?

Individual

Houve alguém que tenha vindo para o processo com uma opinião específica e tenha alterado a opinião ao longo do processo? Quem ? Como? Quando? Porque é que acha que isso aconteceu?

Informação

Pensa que houve informação importante que foi deixada fora do processo? Qual? Especifique.
Porquê?

Argumentação

Tentou argumentar acerca de algum aspecto que considerasse muito importante? Pode-me dar um exemplo.
Conseguiu que os outros o percebessem e aceitassem a sua perspectiva? Convenceu-os?
Pensa que conseguiu fazê-los perceber o seu ponto?
Isso seguia uma direcção que eles não queriam?

Era um assunto controverso, quais foram or argumentos usados?
Factos usados? Exemplos?

Situações inesperadas

Lembra-se de alguns aspectos novos que emergiram durante o processo?
Porque pensa que eram importantes?

Sugestões

Como é que um processo destes poderia ser melhorado de futuro?

Appendix II

Cronology of Events

Date	Autors	Key Events
1876	Miguel Pais	Xabregas-Montijo Engineer and tenente coronel, visionary (1825-1888) Technical Director of the Train Line South and SouthWest, constructed the Train Station of Barreiro
1888	Lye, Eng.	Almada bridge
1889	Bartissol &Seyrig	Almada bridge
1890	André de Proença Vieira,Eng.	Almada bridge
1890	Machinenbau Aktiengesellschaft	Montijo bridge
1913	Portuguese Company	Almada bridge
1929	António Belo retake the Miguel Pais' project	António Belo retoma o projecto de Miguel Pais
1934	Duarte Pacheco	Road-Train - 1933 Minister of Public Works of Salazar. Proposes the construction of a road train bridge over the Tagus - project of Miguel Pais, which is approved in Council of Ministers, but disagreements about the contract terms cancel it
1938	Zuzarte de Mendonça	Almada bridge
1948		Vila Franca de Xira Brige is opened to the traffic
1951	Peña Boeuf	Almada bridge
1953	Salazar - President	Road and train connections between the two banks of the Tagus A commission is created to carry on this task
1966	Salazar - President	Salazar bridge Today called 25 the of April is opened to the traffic. It was constructed by the United States Steel Export Company. Moreover, it is done so that it can have a lower platform with a train line.
1968	III Plano de Fomento	1968-73 III Plano de Fomento
1972.01.19	GNAL proposes Rio Frio location for the New Airport of Lisbon	The Cabinet for the New Airport of Lisbon (GNAL) proposes Rio Frio (Proposal nº25/72 of January 19)
1973	IV Plano de Fomento considers crossing Alges-Trafaria	1973-79 IV Plano de Fomento considers crossing Alges-Trafaria (under President Marcelo Caetano) a solution sympathetic to the Lisbon Port Authority
1975	Revolution	25 th of April
1980	Modernization Plan for the Train Service	For 1988-1994 - approved in Council of Ministers - which includes the creation of a connection between Campolide and Pinhal Novo, through Pragal, through the 25th April bridge
1981	Preliminar Study of the New Airport - Rio Frio	Study for the location of the new airport of Lisbon done by TAMS/Profabril - detailed study of the three locations: Porto Alto, Ota and Rio Frio suggests Rio Frio as the preferable.
1985	National Road Plan	Issued legislation - DL 380/85 - which does not consider a new crossing of the Tagus in the Lisbon Region
1986.03.14	CSOPT Technical Comment on the train crossing	Technical Comment of the Superior Council of Public Works (CSOPT) on the widening and construction of the train line in the 25 th of April bridge
1987.08.20	GNFL becomes responsible for the train crossing in the 25th April bridge	Cabinet of the Train Knot/Interchanche of Lisbon (GNFL) becomes responsible for the train crossing in the 25th April bridge and for a 2nd train crossing in the Lisbon Region, at a longer range
1988	Special Protection Area - SPA	SPAs are sent to EC Portuguese Government sends EC a list of 17 places proposed to be classified as special protection areas (SPA) for the birds. One of the proposals targets the area where the link in Montijo will be set. Although this represents a compromise, these areas can only be effectively created through national enacted legislation, so far not issued. This should have happen in the 2 following years, and it did not happen.
1989.05.00	PROTALM	Studies for the Regional Plan PROTALM is created in Council of Ministers. Studies start in 1990 for the regional land use plan for the Metropolitan Area of Lisbon are initiated, under the responsability of the MPAT-Ministry of Planning and Territorial Administration. Works started in 1990 and are concludes in October 1991 - 2nd phase of the report (stratgic phase) coordinated by Prof. Jorge Gaspar
1990.01.25	Council of Ministers approving the GATTEL creation	Create a interministerial team to develop studies to support the decision of a 2nd road crossing of the Tagus in the Lisbon region.
1990.05.03	FA announces to the AR that a fifth lane will be open in the 25 th of April	FA - new minister of Public Works announces to the Assembly of the Republic that "a central lane will be open" in the 25 th of April bridge
1990.07.00	FA public declarations: train in the 25th April bridge and bridge in Beato-Montijo	In July 1990, FA announced publicly the intention to put the train in the existing bridge and to connect Beato to Montijo (Público, 94.04.03)
1990.07.24	5th lane	5th lane is open The minister of Public Works - Ferreira do Amaral (FA) deffends during the openning to the press the train connection in the 25 th bridge and the construction of a new bridge Beato-Montijo
1991.01.09	Gattel is created	DL 14.A/91 Ennacted legislation creates the Cabinet for the crossing in Lisbon (Gattel), under the responsability of the MOPTC - Ministry of the Public Works Transpor and Communications to "develop, coordinate and control the activity of promotion of the construction of the new road crossing of the Tagus in the Lisbon region.
1991.01.10	Gattel develops of contacts with other entities	Jan-Sept.91
1991.01.09	Tunnel eliminated without explanation	Tunnel was eliminated without any explanation (Público 91.01.09)
1991.02.00	Press: location is Montijo	- Fev/Mar - Press reveals that FA wants bridge in Montijo At this time it is not known any decision expressed by Gattel or any other technical entity in favor of this decision.
1991.05.00	Press: starts refering to 3 options	- May/Jun - Press begins refering to the existence of three hypothesis Three hypothesis begin appearing in the media refering to the study being developed by Gattel: (1) Montijo to Beato; (2) Barreiro to Chelas; (3) Trafaria to Alto do Duque.
1991.09.16	Gattel studies are hand in to Ferreira do Amaral	Gattel concludes the Final Report (document 6) and handed it in to FA
1991.09.26	FA:train in 25 th April + Olivais-Montijo; Expo98 disagrees	FA expresses to the *Público* his intention to put the train connection in the 25 th April bridge and to construct the road bridge between Olivais and Montijo. Expo98 criticizes the North link of the future bridge, which will coincide with the place where the International Exibit is going to be made in 1998.

1991.09.27	FA choses the sunrise corridor - option B	The preference of the FA for Montijo alternative B becomes public.
1991.09.27	The Organization Commission of Expo 98 opposes	Montijo alternative B is challenged by the Expo 98 because it falls in the Olivais Docks (Doca dos Olivais).
1991.10.00	PROTALM report	Conclusion of 2nd phase of the PROTALM report.
1991.10.00	LPN asks MARN about SPA	In Feb. 1992 they still had no answer.
1991.10.00	LPN sends a 'dossier' to the WWF	The LPN (one of the Portuguese Environmental Association) sends a 'dossier' to the World Wilde Fund against the option of Montijo arguing that it will destroy and important nidification area for the bird reproduction
1991.10.00	Media: Minister of the Environment declares in the radio that the "central corridor is technically impossible"	Between Oct. and December 1991
1991.11.00	LPN sents a letter to Commissaire Ripa di Meana	
1991.11.16	Lisbon Regional Commission debates the PROTALM proposals	The CCRLVT - the Regional Coordination Commision for Lisbon and the Tagus Valley, discusses proposals of the PROTALM (the regional land use plan for the Metropolitan Area of Lisbon) They are: (1) a train and road bridge in Barreiro; (2) a road bridge in Carregado; (3) a metro or fast tramway in the 25th April Bridge (cheaper and allowing for more fluidity); This will be the solution deffended by the Minister of the of Planning and Territorial Administration, Valente de Oliveira (VO), will deffend in the Government.
1991.11.22	LPN sends letter to the MARN and EC-DGXI	LPN sends a letter to the MARN- Ministry of the Environment and Natural Resources and to the European Community - General Directorated XI, alerting to the risks of the Montijo option the environmental problems, namely the fact that the bridge will cross a ZSP for the birds are some of the arguments.
1991.11.24	Public consultation is initiated	Public consultation of the Gattel studies is initiated, and it is clear from them, that the option is between Barreiro and Montijo. In accordance to Gattel that option (Barreiro) has the advantage of relieving the congestion in the existing bridge and not cause as much enviornmental and land use problems. The Montijo option has the advantage to be the one that better responds to the interregional and national connections and the connection to the future airport of Montijo. It is also said that there are no environmental problems that could prevent any of the solutions and states that Montijo costs less 52 million *contos* than Barreiro????
1991.11.25	VO and FA meet and discuss disagreements	VO and FA meet and discuss disagreements between the PROTALM, that proposes a bridge in Barreiro and the intention of the MOPTC to locate the bridge in Montijo
1991.11.27	Legislation on Public Consultation Procedures (Regulamentar Decree)	Where it is stated that these should not last less than 40 and not more than 60 days - this legislation was not apply to the Public Consultation held.
1991.12.00	LPN requests EU/EEC for confirmation on the SPA	LPN requests the EU/EEC for confirmation on the classification of the Tagus as a SPA
1991.12.00	LPN sends letter to DG XI asking for confirmation of ZSP	
1992.01.00	Decision on the bridge location - expected date	(Expresso 92.01.04)
1992.01.00	Visible Montijo Speculation	It is already visible the speculation in Montijo Peninsula
1992.01.23	Four ministers meeting	MOPTC, MPAT, MARN and Minister of Deffence -Fernando Nogueira (FN) met, they were all requested comments, FN operated as the facilitator. (Expresso 92.01.04)
1992.01.25	PRESS: "The new bridge and the future of Lisbon as an European capital"	Público António Fonsca Ferreira and Luis Bruno Soares
1992.01.31	Technical Comment on the alternatives of location of the new crossing from Valente de Oliveira - MPAT - Ministry of Planning	The comments requested at the meeting on Jan 23rd have been hand in by VO-MPAT, and forward by the PM on Feb 6
1992.02.00	EC confirms the classification	The EEC/EU confirms the classification made in 1988,by the Portuguese Nation that this area of eatuary crossed by the future bridge of Montijo-Sacavém is a ZSP
1992.02.10	Comment by Carlos Borrego - Ministry of the Environment in favor Chelas-Barreiro	The Minister of the Environment and Natural Resources, writes a comment using Gattel data, indicating the negative effects to the environment produced by the option of Montijo.
1992.02.10	Written comments by CB-MARN	The comments requested at the meeting on Jan 23rd have been hand in by CB-MARN, and forward by the PM on Feb 14
1992.02.17	Confirmation of the registration of the dennounce nº P 4008/82	dennounce presented by the LPN relative to the new project of a bridge over Tagus in Lisbon Annexes a Technical Comment sent by the Royal Society for the Protection of Birds-RSPS to the EU/EEC
1992.02.17	DG XI confirms in writing the existence of Tagus SPA	DG XI confirms in writing to LPN the existence of Tagus SPA
1992.02.17	Doubts about the exact North connection	The North connection is still under doubt- Olivais-Sacavem (Correio da Manhã 92.02.17)
1992.02.19	NORMA survey reveals Portuguese opinions divided	A Norma survey reveals that the Portuguese are divided about the options concerning the crossing of the Tagus: half of the population supports the hipothesis Montijo and hald the Barreiro option.
1992.02.26	European Community ignores complain on the new Tagus bridge	EC does not know about a filled complain because of the new Tagus bridge (DN 92.02.26)
1992.02.26	FA accused of "asphalt arrogance"	FA has been accused in the media of "asfalt ' arrogance of the 40's and the 50's"
1992.02.26	FA commands that Gattel only follow up studies for the Montijo option	FA orders Gattel to carry on studies only on the Montijo option
1992.02.27	Open letter of GEOTA to PM	Open letter of GEOTA to Prime Minister
1992.02.28	Letter from Laurens Jan Brinkhorst director of DGXI	Laurens Jan Brinkhorst director of DGXI, writes a letter to the Portuguese Government about possible violations of the community directives 337/85 and 409/79 concerning Environmental Impact Studies (EIS), of protection of wild birds.Brinkhorst says also that he does not understands why the Montijo option was chosen if others, according to Gattel, present less risk. Answering the MOPTC says that there is yet no project nor any decision, therefore no violation.

1992.02.28	**Letter from the Director of DG XI to the Portuguese Government**	**Letter from Laurens Jan Brinkhorst - the Director of DG XI to the Portuguese Government** -were it is requested clarification of eventual violations to the EC directives 337/85 and 409/79. This letter resulted from the letter of complain sent by LPN to Ripa di Meana
1992.02.31	**Comment issued by MPAT in favor Chelas-Barreiro**	**The MPAT produces a written comment in favor of the crossing in Chelas-Barreiro** there are land use, environmental and financial arguments in favor of this option. The MPAT team makes the accounting for all the two briges and all the needed infrastructures.
1992.03.00	**Coloquium of the ADFER - New crossings of the Tagus in Lisbon**	**Coloquium of the ADFER - New crossings of the Tagus in Lisbon** with the participation of Carlos Pimenta, Jorge Gaspar, Fonseca Ferreira (CML), Jose Manuel Viegas (IST) and Oliveira Martins - as moderator.
1992.03.00	**Decision on the bridge location - expected date**	(Independent 92.02.14) (Correio da Manhã 92.02.17)
1992.03.00	**Gattel documents stating the advantages in financial and technical terms of the road bridge in Montijo**	**Gattel documents are made public, which state that in financial and technical terms the road bridge in Montijo is the most convenient, connected to CRIL (Lisbon circular) in Sacavém.**This would cost 121 millions of *contos* against 200 million of the train and road connection in Barreiro.
1992.03.12	**Supreme Admnistrative Court accepts judicial action by LPN against MOPTC**	**The Portuguese Supreme Administrative Court accepts the complain presented by the LPN against the MOPTC concerning the violation of legislation on EIS.**There is no EIS for any of the locations of the future bridges options or due to the directive of SPA
1992.03.04	**Written notification by the presidents of the MAL**	At the begining of the night the Presidents of the Metropolitan Area of Lisbon (MAL) issued a notification with their expressed opinion (DN 92.05.03)
1992.03.05	**CM meet in Palmela**	The 18 MAL Municipalities (CM) are going to meet in Palmela (Público 92.03.06)
1992.03.05	**Proposal of the Parlamentary group of the PS**	The parlamentary goup of the Socialist Party (PS) issued a proposal (DN 92.03.05)
1992.03.07	**Bridge Sacavem-Montijo**	(Semanário 92.03.07)
1992.03.12	**Court of Lisbon accepts LPN complain**	**The Civil Court of Lisbon accepts LPN complain against the Portuguese State,** aiming to forbide the construction of the bridge in the sunrise corridor, because it violates the 409/79 directive, the Ramsar Convention and the Berna Convention
1992.03.12	**Environmental Associations assume a more agressive stand**	Environmental associations (Quercus, GEOTA and LPN) make known to the press that they are going to adopt a more agressive stand and simulatneously develop joint efforts against the Montijo option
1992.03.12	**Joint Press Conference given by Quercus, GEOTA and LPN**	
1992.03.12	**Press conference of LPN, Quercus and GEOTA**	
1992.03.12	**Rippa di Meana considers LPN letter as of complain**	Rippa de Meana commissaire to the EEC considers the LPN letter as a complain to the EEC/EU- 12.3.92
1992.03.12	**Seixal Municipality Meeting**	The Municipality of Seixal met, and expressed the train connection in the 25th April bridge as a priority (Público 92.03.12)
1992.03.13	**Montijo is not going to resolve congestion**	(DN 92.03.13)
1992.03.17	**SPA for the birds conservation**	40 thousand ha, 10 nidification species,26 winter birds, plus other species (DN 92.03.17)
1992.03.24	**Ferreira do Amaral in the Assembly of the Republic states the possibility of the bridge being constructed by private investors and being mixed**	**FA in the AR** states that the new road bridge can be constructed **by private investors and could be mixed (cars and train)**
1992.04.00	**High speed N Lines Commuting open to proposals**	**High speed North train lines commuting were open to proposals,** they were first notified to be knowing the answer by the end of 92, than by the begining of 93 and now not until 94.(Expresso 93.06.05)
1992.04.02	**Estuary has European Importance**	The bigger estuary of West Europe and the **10th European Wetland** in terms of birds (Sábado 92.04.02)
1992.04.02	**Council of Ministers decides to carry out the train connection in the 25th April bridge**	**The Council of Ministers pass the train in the 25th April bridge** The Council of Ministers decides to carry on the train platform of the 25th of April bridge, for heavy mode. Tendering expected for 1993 and end of construction for 1996
1992.04.05	**Debate promoted by the ADFER concerning the train crossing in the 25 th of April bridge**	The Portuguese Association for the Development of the Train Transportation about the **train crossing of the 25 th of April** where about 1,000 people participated (ADFER, Lisbon 1990)
1992.04.14	**Colloquium in LNEC about the new bridge**	**Colloquium in LNEC about the new bridge**
1992.04.14	**Presidente of the CCRLVT reprimend by VO**	The president of the regional commission of the region of Lisbon and Tagus valley - Salter Cid - has been reprimend by the Minister of Planning - VO- **for having deffended publicly the Barreiro location** (Independent 92.02.14)
1992.04.23	**Ferreira do Amaral issues order for Gattel to prepare final proposal**	**FA issues order (Despacho normativo) giving instructions to Gattel to prepare "final proposal of location"** for the new bridge, "considering excluded the central corridor option"
1992.04.23	**Written comments - CSOP**	The written comment produced by 3 of the 26 members of the consulting board of the ministry of the Public works, a well credible technical board, is dated of 92.04.23
1992.04.24	**Technical Comment signed by three technicians of the Superior Council of Public Works** Parecer nº 215/PI "Nova travessia do rio Tejo em Lisboa"	**is hand in to the Minister FA.** The two technicians stress the technical difficulties of the Barreiro option in relation to the simplicity of Montijo.
1992.04.24	**Ministerial dispatch**	**A ministerial dispatch made public by the media, shows the decision to construct the bridge in Montijo** and instructes Gattel to only make final studies only to this option.
1992.05.00	**Prime Minister meets with several governmental and non governmental entities connected to the process**	**PM meets with several governmental and non governmental entities connected to the process**
1992.05.01	**FA tells CB about the decision to exclude Barreiro**	FA met CB yesterday (92.05.01) in the MARN to let him know about the decision to abandon Barreiro.CB did not take it well. (Expresso 92.05.02)
1992.05.09	**CB changes position**	CB told the TSF radio on the week of may 9,92 that "technically speaking, the bridge cannot be constructed in the central corridor" he based his opinion in a document of the CSOP, but ignored the written comment developed by his cabinet dated from Feb 10, 92" (Expresso 92.05.09)
1992.05.22	**Carregado studies only concluded in 7 to 8 months**	(Semanário 92.05.22)
1992.05.22	**CB asks for CSOP document**	(Semanário 92.05.22)

1992.05.22	"Never a project had the environmental aspect so debated"	Stated by an element of the CB cabinet (Semanário 92.05.22)
1992.05.28	LPN stresses the complain to EC	By a letter the LPN stresses the complain to EC against the Portuguese State/Nation
1992.07.13	Gattel presents its final proposal to four ministries	Gattel presents to the MOPTC, MPAT, and MARN and the Ministry of Sea its final proposal of the location of the bridge - between the salinas in Alcochete and the platform in Beirolas, passing through Sacavém and the urbanization of Portela
1992.07.13	Meeting MOPTC, MPAT, MARN and Sea	Gattel presents the conclusion of the studies to the four ministers
1992.07.13	Proposal checked with 4 CM	The proposal was checked with the four municipalities with more incidence in the project (Lisbon, Loures, Montijo and Alcochete)
1992.07.29	Open Letter to PM from three environmental associations	Open letter to the Prime Minister from the LPN, GEOTA and Quercus against the "policy of consumpted?stated? fact of the MOPTC"
1992.07.30	Council of Ministers approves the location	Location of the new bridge in Montijo was approved today in teh meeting of the Council of Ministers.
1992.07.30	Council of Ministers approves the Montijo option	the Council of Ministers approves the construction of the bridge in Montijo despite of the critics made by the ministers of Planning, VO and of the Industry, Mira Amaral. Carlos Borrego was on vacation in Cascais and António Taveira, Secretary of State of Natural Resources assumed a distant position.
1992.07.30	Fares increase	The fare increase will only be verified if in 1997 there will be a train in the 25 the April bridge "assuring an offer" for connection of both banks - stated the MOPTC (Público 92.07.31)
1992.08.00	Environmental Associations declare war (phase II)	
1992.08.00	LPN, GEOTA, Quercus - announce jointly their intention to fight against the bridge in Montijo	LPN, GEOTA, Quercus -the three more important Portuguese environmental associations announce jointly their intention to fight against the bridge in Montijo "in the most spetacular form they can"
1992.08.13	MOPTC legislation to open the Public Tendering for train crossing in the 25th April	MOPTC legislation (*portaria*)is published to make the train conection in the 25th April bridge.
1992.08.13	Set of controls against speculation	The Government approved today , a set of measures against speculation, due to the expectancy created by the location of the new bridge. It was identified a "non aedificandi" zone of 200 meters for each side of the corridor. The Government is also aware of the need for imposing a "value added" measures and expropriation.
1992.08.18	Open letter from Presidents of 4 Southern Municipalities against Montijo	The Presidents of Almada, Barreiro, Moita and Seixal launch an open letter against the bridge in Montijo.They say that the chosen option is not going to relief the traffic congestion in the 25th April bridge.
1992.09.00	Prequalification of the participants in the construction of the new bridge	
1992.10.06	President of Montijo? presents a dossier to the Govern of the neede infrastructures and facilities	The president of Montijo presented to the Government a list of the needed infrastructures and facilities, to be provided by the state, due to the construction of the new bridge. (DN 92.10.06)
1992.10.15	Legislation is issued defining the location and contract terms is published	DL 220/92 is published. It defines the location of the bridge and terms for its concession.
1992.11.29	Development controls	Government set restriction rules for the construction along the path of the new bridge.
1993.01.07	Open of the tendering for pre-qualification for the construction of the bridge	Open of the tendering for pre-qualification for the construction of the bridge
1993.03.18	Legislation issued defining "zone of urban restriction and control"	MPAT issued the DL 9/93 defining the "zone of urban restriction and control" to the area where the new bridge will be constructed. The legislation controls the activities developed there and the alteration of land uses.
1993.06.00	Europonte and Tarmac gave it up	The investors Europonte (under the GTM French firm) and Tarmac (under the British firm with the same name) gave up the tendering because they consider the endevor has "high financial risks" and does not have "any garantees that assure a minimum garantee"
1993.07.29	"Millions started flowing"	(Público 93.07.30)
1993.09.00	Bouygues meets Cavaco in Paris	Martin Bouygues (MB) - of the main French construction firm, meets the Portuguese Prime Minister Cavaco who is visiting Paris
1993.10.04	Balladur invites Cavaco for breakfast	Edouard Balladur - French Prime Minister, invited Cavaco for breakfast. He will be introducing Cavaco to French industrial, financial and commercial people. (Expresso 93.10.02)
1993.10.04	Cavaco meets at lunch the administration of Matra, Renault and France Telecom	Cavaco will meet at lunch the administration of 3 big companies: Matra, Renault and France Telecom.
1993.10.04	End of proposal submission for the construction of the new bridge	Due date for the proposal submission for the construction of the new bridge. Proposals will be open in LNEC- National Laboratory of Civil Engineer
1993.10.05	Bouygues meets Cavaco again in a dinner offer by Jacques Chirac	MB will meet Cavaco again in a dinner offered by Jacques Chirac. Other people present. (Expresso 93.10.02)
1994.00.00	Expected date for the decision on the location of the airport	(Expresso 92.01.04)
1994.00.00	Representatives of the DGXI visit Portugal	Representatives of the DGXI visit Portugal to discuss environmental compensations for the construction of the new bridge. From this meeting results the proposal of the Portuguese Government to expand the ZSP for the wild birds and to recover a wide area of salinas in the Southern bank of the Tagus
1994.01.00	Fare increase approved in the Council of Ministers	(Expresso 94.06.04)
1994.02.22	Press release by GEOTA+LPN	GEOTA and LPN make a joint notification to the press
1994.02.26	Memorandum Gattel	A memorandum of Gattel, dated from 94.02.26, has been released (1) stating the advantages of Montijo over Barreiro; (2) stating that there are no environmental constraints that will make impossible any of the solutions."If the new crossing (Montijo) is made it will be 'the true April 25th bridge'" (Expresso 94.04.25)
1994.03.00	Construction is expected to end	(Expresso 94.04.16)
1994.03.03	GECAF (train cabinet) is created	It is created the Cabinet for the managing of the Construction of the Train Line in the 25th April bridge (GECAF)
1994.03.07	Responsabilities of Gattel are changed	The responsabilities of Gattel are altered. It is charged with controling the conception and execution of the new bridge.

1994.03.14	**European Commission - DGXI**	**requested "detailed impact studies" in a letter sent to Ascenso Pires -MARN**
1994.03.15	**LPN complain to European Commission**	**LPN sends letter of complain to European Commission**
1994.03.30	**Bouygues makes an offer to Brisa**	**Bouygues, one of the possible consructers of the new bridge offers Brisa 80% of the exploration and maintenance of the future crossing.** Few days before the last decision on the builder.
1994.04.12	**FA may by this day have all the elements to make the decision**	(Expresso 94.04.09)
1994.04.16	**FA gives up a Press Conference**	**FA gave up a press conference scheduled for today to announce the winer of the tendering for the future bridge** (Expresso 94.04.16)
1994.04.19	**Possible announcement date for the winer**	**FA will probably announce the winer either tuesday or wedenesday of this week (19,20)** (Expresso 94.04.16)
1994.05.13	**Reclamation period due**	(Expresso 94.05.07)
1994.10.00	**New bridge construction begins**	(Expresso 94.04.16)
1997.00.00	**Road connection in Montijo**	
1998.03.00	**Montijo bridge constrution**	**- Mar/Apr -Expected conclusion of the construction of the Montijo bridge.**
2005	**Saturation of the Portela airport**	Portela airport is expected to reach saturation by the year 2005 or 2010 (Expresso 92.01.04)

Appendix III

News

DATE	News paper	Section	Page	Title	Author	Issues
90.06.21	Lusa			Uma nova ponte sobre o Tejo vai ser construída entre Xabregas e Montijo		It is not put aside the tunnel possibility..also under study
90.06.22	DN	Sociedade	16(1ª)	Novo atravessamento sobre o Tejo deverá ligar Xabregas ao Montijo		Public tendering still this year
90.06.28	DN	Opinião	8 (1ª)	A ponte nova		
90.07.07	Semanário			Privado aceleram a obra		
90.07.07	Semanário		17	Nova Ponte sobre o Tejo - câmaras contra o Governo. Privados aceleram a obra.	Sérgio Trefaut	Machado Rodrigues:if the bridge between Xabregas and Montijo it is going to destroy Lisbon
90.07.24	Público	Destaque	2	Quinta via - o ministro mantém segredo até ao fim		legislation that increase fares not published yet; after this is the train;FA promises to innovate.
90.08.00	Público	Económico		Onze saídas para a Europa		
90.12.14	Independente			"Três já querem ponte"	J.Paulo Matos, Carlos	Creation of at least three investors interested in construction and exploration
91.01.09	Público			...tunel.....		
91.02.21	Jornal			Nova ponte-A carta dos 18.		Palmela:March5 for discussion.
91.03.16	Semanário	Obras-Nacional	18	Nova ponte sobre o Tejo liga Montijo ao Beato	Dulce Salzedas	For the first time, the minister FA opts for the legal "international private tendering"; the government is not going to spend a penny. some history.
91.03.18	DN	Economia	3	Nova ponte sobre o Tejo já tem candidatos	Luis Faria	also applying for the construction of the train connection in the 25th of April Bridge
91.03.23	Semanário	Obras-Nacional		Nova ponte no Tejo-Sampaio não licencia Beato.	Dulce Salzedas	CM Lx owns most of the land and Beato does not have conditions to house infrastructures."In deffence of the rights of town"
91.03.23	Semanário	Obras-Nacional		Soares da Costa lidera o consórcio	AF	
91.03.29	Expresso			Nova ponte pode incluir gestão da actual		The MOP is studying the possibility to integrate the managing of the present bridge with the tendering of the new bridge
91.06.28	Público	Local		Ligação Beato-Montijo excluída		Three corridors are still on the table. CM Lx only wants to listen to the sunrise
91.06.29	Expresso			Barreiro pode tirar nova ponte ao Montijo	Frederico Carvalho	
91.06.30	DN		16	"Fecho da golada" está em "banho maria"		Absence of the APL from a meeting organized by teh CM Almada
91.06.30	DN	Sociedade	17(1ª)	Nova ponte unirá Montijo-Alcochete-Lisboa - propõe a Associação de Municípios do distrito de Setúbal		
91.06.30	Dia		6	Campo de tiro de Alcochete vai prejudicar novo aeroporto		
91.08.17	Expresso			Nova Ponte do Tejo será entre Chelas e Barreiro		
91.09.28	Público	Sociedade	23	Caiu-nos a ponte em cima		
91.10.04	Expresso			Técnicos contestam escolha do ministro	Mário de Carvalho, João Garcia	"many studies to be made", option not definitive,planning
91.10.04	Expresso			Ambiente e portagens ameaçados pela nova ponte	Mário de Carvalho, João Garcia	Environment and fares threatned by the new bridge
91.11.02	DN	Sociedade	15(2ª)	Polémica envolve nova ponte sobre o Tejo	Artur Sardinha	Public news cause perplexity
91.11.06	Público	Opinião	52,53	A nova ponte sobre o Tejo e o Ordenamento da Area Metropolitana	Leopoldo de Almeida	population served, land use planning
91.11.15	Independente		8	A bronca da ponte Cavaco	Zélia Pinheiro	VO has the PROTALM, not new bridge, not train connection. The war of the lobbies
91.11.16	Público			Localização da nova ponte em debate.PROTAML requer rapidez de decisão.Estação central em Chelas-Areeiro		
91.11.17	DN			Localização da nova ponte continua dividida em três-PROTALM aprofunda		PROTALM did not reach definitive conclusions
91.11.18	Público			Estudos da nova ponte em consulta pública.		
91.11.21	Público			Nova ponte sobre o Tejo		
91.11.22	Jornal			A ponte é uma miragem	Luisa Alexandra Botinas	Opinions are divided. Cavaco is the one that will decide
91.11.23	Expresso			Nova Ponte sobre o Tejo		
91.11.25	DN	Economia	1	Comunidade vai financiar a nova ponte	Leonor Matias	EU financing in 30%
91.11.29	Independente			Uma valente derrota	Zélia Pinheiro	VO who has been adviced that the best solution was the Barreiro, is informed by FA that he wants the bridge in Montijo. VO repriments the planning group
91.11.30	Expresso		23	Comboio sobre o Tejo custa 100 milhões		
91.11.30	Expresso			CEE financiará 30% do projecto		FA already announced the sunrise corridor
91.11.30	Expresso			Expo 98 muda projectos de Lisboa		
91.11.30	Público			Localização da nova ponte sobre o Tejo. CMs sugerem compasso de espera.		
91.12.03	DN	Sociedade	16(1ª)	Ponte em Olivais Montijo ganha apoios		Positions divided between sunrise and central corridor.
91.12.07	Expresso		1, last	Borrego acusa Ferreira do Amaral		MA "there are certain issues that are not transparent" - public ocnsultation
91.12.07	Expresso	Opinião		Lisboa na nova ponte	João Paulo Bessa	"Discussions has have the advantage to bring out of the technical cabinets issues that concern lots of us"
91.12.10	Público			2 milhões para a habitação		
91.12.14	Expresso			Montijo ganha ponte e aeroporto		"the future aeroport seems to be the trunfo that FA had kept to play at the righ time"
91.12.20	Jornal			Altos voos no Montijo		Change
91.12.20	Independente			Ponte: Sampaio quer juntar ministros		
91.12.20	Jornal			Política de Aeroporto	LAB	Before making changes in the airport the government has to have a policy for traffic capture
91.12.21	Expresso			Ponte e aeroporto no Montijo. Pimenta também critica FA.. e Nogueira diz que não sabia de nada		Pimenta: I expect that the next public auditing would be open, serious and participated

91.12.21	Expresso			Pimenta considera 'um escandalo' a opção de Ferreira do Amaral	João Garcia, Mário de Carvalho	"this implies the urbanization of a sensitive area with high ecological values'
91.12.23	Público			A localização da nova ponte sobre o Tejo. Onde e porquê?	Oscar Ramalho - advogado+prof.ens.secundário	
92.01.03	O Jornal			Montijo - Que belo presente o da ponte	Ana Pereira da Silva	property speculation
92.01.04	Expresso			Ponte e Aeroporto no Montijo - Divergências levam a reunião entre quatro		meeting of the four Ms*aeroport
92.01.11	Expresso		1,last	Ponte no Montijo custa menos 60 milhões de contos - relatório final confirma Montijo		costs (-60mi contos) * technical
92.01.17	Público			A nova ponte sobre o Tejo e a opção "corredor nascente"	Oscar Ramalho	
92.01.19	Público			Os sete pecados que a nova ponte sobre o Tejo não deve cometer.Pecado contra o paisagismo, ecologia, comodidade,especulação,malbaratar de riquezas	José Tudela	Seven sins the new bridge should not commit:against landscape, ecology, confort, speculation, waste of resources....missing
92.01.21	Público			Ponte sobre o Tejo.Ministério do Ambiente defende mais estudos.		
92.01.25	Expresso			Ferreira, Valente e Borrego: desacordo continua		disagreement after 2hr meeting on Jan23.94
92.02.12	Público			Ferreira do Amaral recebeu as CMs.Nova ponte decidida dentro de um mês	José António Cerejo	
92.02.13	Correio da Manhã			Ambientalistas unem-se contra a ponte no Montijo	Rosário Lira	Rippa di Meana commissaire for the EEC considered LPN letter as a complain
92.02.13	Correio da Manhã			Prós e contras de cada opção		Central and sunrise corridor
92.02.13	Correio da Manhã			Tribunal de lisboa aceita acção contra o governo		ZPE. Complain to EEC - Ripa di Meana and the complain
92.02.13	Correio da Manhã			Travessia actual com ferrovia ligeira		CM Seixal
92.02.14	Independente			Valente demite Cid		Salter Cid pres.CCR reprimend by VO*Isaltino critics
92.02.17	Correio da Manhã		5	Ponte Montijo-Sacavém atinge o primeiro lugar no "top" das preferências-Para os autarcas de Lisboa e Loures		
92.02.18	Público			Financiamento comunitário para a nova ponte em risco. Comunidade confirma Tejo com ZEP		
92.02.21	Jornal			Nova ponte. A carta dos 18		
92.02.21	Independente	Política		João Maria sobe á ponte		Oliveira Martins is going to give is opinion to VO.FA calls full professors. Only Viegas?Possibility of Gattel technicians present demissions
92.02.22	Público			Sondagem Norma revela impacte entre os dois corredores. Nova ponte divide portugueses ao meio.		
92.02.22	Expresso		1,3	Valente 'arrasa' hipótese do Montijo		Opinions of VO and CB.1st time in 30 yrs that there are development guidelines for MAL
92.02.26	Público	Local-opinião	44	Reflexões sobre o processo de escolha da nova travessia do Tejo	MMagalhães Ramalho	1st time a decision from the MOP is challenged publicly and officially by responsibles for other Ministries. Challenged to the idea that technology solves everything. MOP arrogance. 6 alternatives. Tunel . Public debate.
92.02.26	DN			CE desconhece processo contra ponte sobre o Tejo		
92.02.29	Expresso			Ponte sobre o Tejo. Couto e Pimenta apoiam Valente de Oliveira		CS responsible for the Expo98. Carlos Pimenta will use the party meetings to bring the issue. Municipalities positions.
92.03.02	DN	Soiedade	21(4ª)	Nova ponte do Tejo em Chelas-Barreiro defendem os ecologistas do Geota em carta aberta ao primeiro-ministro		
92.03.05	DN			Autarcas rejeitam alternative dos Olivais. Câmaras da AML defendem ponte Moscavide-Montijo		Request for infor. FA centered in very specialized issues.Proposal of the Parlamentar group.
92.03.06	Público	Local	49	Câmaras rejeitam ponte nos Olivais		
92.03.06	DN	Sociedade	15(1ª)	Câmaras da AML defendem ponte Moscavide-Montijo		
92.03.06	DN			(Decisão sobre a nova ponte sobre o Tejo) Relatório põe em causa FA		3 out 26 CSOPT,does not recommend any location,it was refered by FA in the Council of Ministers of Jul30, 92 to convince colleagues of best option
92.03.07	Semanário		25	Ponte Montijo-Sacavém		Expo98 and Traffic issue. Train in the bridge 25th of April is going to have the concession given by April.
92.03.07	DN		2	Valente de Oliveira não deseja polémicas com Ferreira do Amaral		Refuses the idea of an opposition. The solution proposed is connected to the land use development
92.03.13	DN	Sociedade	1,14(3ª)	Acção da LPN aceite por tribunal lisboeta. Juiz pode travar ponte Olivais-Montijo		
92.03.13	Público	Local	53	Ponte sobre o Tejo. Tribunal aceita acção contra corredor nascente.		Court of lisbon accepts LPN complain and Geota, Quercus and LPn became more aggressive. Press conference - 12.3.92
92.03.13a	Público	Local-opinião	54	Nova travessura sobre o Tejo em Lisboa	João Joannaz de Melo, Luis Rosmaninho	Informação e processo
92.03.13b	Público	Local-opinião	54	Seixal quer ver comboios na ponte		CM Seixal considered with priority the train connection over the 25th April in a meeting of 12.3.92
92.03.17	O Diário	Actualidade	12	A ponte da discórdia		Environmental associations point that the government is going to make a wrong decision. They will promote public debate.
92.03.17	DN	Sociedade	17(4ª)	Leis "proíbem" ponte Montijo-Olivais -acusa Liga para a Protecção da Natureza na acção contra o Estado		
92.03.17	DN			Leis 'proíbem' ponte Montijo-Olivais-acusa a LPN na acção contra o Estado		National Constitution, Directive 79/409/CEE, the Ramsar and Berna conventions and the Portuguese Law 11/87 are being violated.
92.03.21	Público			Folhetim		
92.03.24	Público			Nova ponte para 1996.		
92.03.25	DN	Política	1,5(3ª)	Nova ponte sobre o Tejo não pesará sobre o orçamento-revelou FA durante a interpelação do PCP sobre as áreas metropolitanas		

92.03.26	Público	Local	82	Ponte no Montijo suscita interrogações nos responsáveis comunitários do ambiente. Bruxelas pede explicações ao Governo.	António Granado,Ricardo Garcia,João Paulo Velez	Directiva das aves também em causa."Ainda nem há projecto..."
92.03.26	Público	Local		Bruxelas pede explicações ao governo português	António Granado, Ricardo Garcia, João Paulo Velez	nothing is decided'*'there is no project'
92.03.27	Público	Opinião		A nova ponte e o ambiente	João Martins	
92.03.27	Público	Local-opinion	52	A nova ponte e o ambiente	João Martins	Proposes the correction in Samouco in order not to affect the salinas, not to localize the airport in BA 6, port expansion to the BA6 area,. Gattel studies unsufficient. PROTalm not submitted to pubic consultation.
92.03.28	Expresso	Nacional	20	Financiamento da nova ponte sobre o Tejo. Bruxelas avisa o governo de regras a cumprir.		DGXI Complain and response
92.04.00	A Revista	Communicações	47-50	Um caso ponte..agudo		Besides a 20 years delay, the polemic goes on.
92.04.04	Público	Local-opinião	40	Um aterro-ilha entre Sacavém e Montijo	Franciso Encarnação	Aterro-ilha towards cost reduction
92.04.14	Público	Local-opinião	52	Será uma ponte mais que uma 'passagem entre duas margens'?	José Manuel Palma-Oliveira	Environment, Economy and Human Psychology
92.04.14	Expresso			Nova ponte sobre o Tejo. Relatório 'fantasma' faz tropeçar Vara	Orlando Raimundo	Socialist Armando Vara acsuses FA of lying about the comments of the CSOP
92.04.15	Público			Colóquio sobre a nova ponte sobre o Tejo - opção nascente quase certa.		
92.04.16	DN	País	24(1ª)	Comissão mostra no rio vantagens da ponte entre Lisboa e Alcochete		
92.04.17	Expresso			Terrenos da nova ponte com encargos de mais-valia		Land within the construction of new bridge will suffer charges of value added=50% (25% for the governement and 25% for the municipality)
92.04.25	Público			Nova ponte pareceres favorecem o Montijo.		
92.04.25	Expresso		1,last	Governo opta de vez pela solução Montijo		Technical risks therefore financial. Memorandum Feb26.94.
92.04.26	DN	Sociedade	14	Nova ponte sobre o Tejo ligará Lisboa ao Montijo		Rejection of Barreiro-Chelas for containing "high risk technological and financial" said FA. to be concluded in 5 years.
92.05.02	Expresso	Política		Borrego alicia Pimenta contra nova ponte sobre o Tejo		FA tells CB about the decision to exclude Barreiro.They met in MA.CB did not take it well and tried to convince Carlos Pimenta to criticize it publically.
92.05.03	Correio da Manhã		10	Gentes do Montijo querem mas temem nova ponte do Tejo	Rosário Lira	Faster to get to Lisbon.Residents of Montijo, are happy the possibility of economic expansion, faster supply, fearing changes in safety,.
92.05.09	Expresso	Nacional		Horizontes em mudança	Mário de Carvalho	CB changes position. Residents of Montijo wants to become rich, but are afraid to loose QOL.
92.05.20	Público			Holandeses começam em breve sondagens no rio. Concurso da nova ponte antes de Agosto.		
92.05.22	Semanário	Sociedade		Nova ponte do Montijo: o parecer secreto do ministro	Maria Martin	Access to MOP documents.CB asks for them.FA short range, VO long range.Never environment so debated.Carregado. Due process.
92.06.03	Público			Câmaras rejeitam ponte nos Olivais		Meeting in Palmela of the 18 CMs. Definition of the issue.
92.06.04	Público			Nova ponte. Protecção na natureza reforça queixa na CE. Criticas atingem	António Granado	
92.06.13	Expresso	Nacional	11	VO ao expresso-"O assunto da ponte não está resolvido"	Carlos Magno	Vo"I think the issue of the bridge is not resolved".Government meetings very partipative
92.06.18	DN			Câmara de lisboa quer conhecer todos os estudos da nova ponte		Critical position of the CMLx.Train w/urban functions 25April, and suburban functions elsewhere
92.07.13	DN	Sociedade	1,16	Ponte Barreiro-Chelas "ainda mexe"		MPAT comments favor Barreiro.Comparison Barreiro and Montijo.Cost calculation.
92.07.17	Público	Sociedade	16,17	Ponte de Sacavém ao Montijo		
92.07.17	Público	Local	17	Comboios no Tejo concurso em Setembro		
92.07.17	Público	Local	43	Comboio na Ponte leva polémica a Almada		
92.07.17	Público	Sociedade		Proposta final de localização pronta a discutir em Conselho de Ministros. Ponte de Sacavém ao Montijo		Gattel presents study to 4 Ministers(13.7.92)
92.07.17	Público	Local	43	Tejo. Comboio na ponte leva polémica a Almada	Raul Tavares	PresAlmada against LCoutinho(PS): Train-wrong solution plus worsen accessibility problems and only 20%of vehicules
92.07.18	Expresso			Nova ponte do Tejo divide ministros		Ministries meeting in 13.7.92-MOP,MPAT,MA and MAR.CB "mal menor".MOP and Mar less populated areas better for land use planning intervention
92.07.25	Expresso			Montijo desvia só 13%	Franciso Ferreira da Silva	Decongestion values. Montijo less contributes to descongestion (only 13%)Barreiro 26% and Trafaria 26%
92.07.30	Público			Conselho de Ministros decide hoje nova travessia com base em relação		
92.07.30	Público			A ponte da discórdia	João Paulo Velez	
92.07.30	DN	Política	1,3	Iniciativa privada vai passar pela ponte do Montijo		
92.07.30	DN	Política	3	Polémica		
92.07.30	DN	Política	3	Associações ambientalistas escreveram ao Primeiro Ministro		
92.07.31	Independente		3	O folhetim da ponte acabou.Ganhou FA.Ponte final	António Ribeiro Ferreira	VO deffended Barreiro until the last moment(traffic, anonimous studies,enviornmental impacts, speculation) CB absent-ATaveira inocuous
92.07.31	Público	Local	1,46	Comboio na Ponte 25 de Abril garantirá oferta de massas em 1997. Nova travessia triplica portagens		New crossing explored jointly with 25 of April.Triple of the fares.
92.07.31	Público	Local	46	A ponte nascente-O dia D dos especuladores.	JPVelez	Studies began 10 yrs ago -Viana Baptista. 5 reasons for PS disagree with the bridge. Rush to bying land.
92.07.31a	Público			Localização da travessia do Tejo aprovada com reservas de dois ministros. A ponte nascente.	João Paulo Velez	
92.07.31a	Público			As cinco razões do PS e o salto das portagens		
92.08.01	Público			Consórcio na ponte e novo tabuleiro.		

92.08.01	Público			PS contra a nova ponte.		
92.08.01	Público			Ponte e férias.		
92.08.01	Expresso			Ponte Sacavém-Montijo realiza sonho da Brisa.The cc would not be of great interest for us -Vasconcelos Guimarães from Brisa	Alexandre Coutinho	BRISA dreams with a AE Minho-Algarve
92.08.01	Capital		3	Mudanças com chegada da ponte.Quem não pode esperar mais.	Lucilia Tiago	Residents happy with the bridge which will bring development, activity, jobs but concern about losing quietness and safety.
92.08.02	Público			PS- Lisboa adia posição sobre a ponte.		
92.08.03	Jornal de Notícias			Nova ponte sobre o Tejo já mobiliza construtores-consórcio Luso-hispano-brasileiro na corrida		6 big firms
92.08.07	Jornal	Nacional		Expectative de Loures e Alcochete.A ponte é uma miragem para as duas margens	Nuno Guerreiro, Paulo Chitas	Ponte em Alcochete not in Montijo.Population against:3.8%Montijo, 4.75% Alcochete
92.08.08	Expresso	Negócios		A ponte de todos os desejos	Alexandre Coutinho, Victor Andrade	Residents happy.Population may duplicate. PresMontijo"It was a dream of 30yrs and it seems the most correct solution"
92.08.12	Público		38	Nova ponte une grupos de ecologistas.Frente ecologista contra o governo.		
92.08.12	DN	Sociedade	15(2ª)	Especulação imobiliária no Montijo começou antes da escolha da ponte-acusam os ecologistas em conferência de imprensa	João Pedro Fonseca	LPN,Quercus, Geota
92.08.12	Jornal	Local	38	Frente ecologista contra o Governo	João Paulo Velez, Clara Barata	Env.Ass."more spetacular fight"Users,public debate,other env.ass.Afterwards mornitoring
92.08.12	DN	Sociedade	15	Especulação moniliária no Montijo começou antes da escolha da ponte	João Pedro Fonseca	Env.Ass. accuse, new bridge connected to speculation. Cavaco has short memory., forgot what he told in Rio
92.08.13	DN	Opinião	6	Os pilares da ponte		
92.08.14	Correio da Manhã			Governo evita especulação nos acessos á nova ponte		Council of Ministers approves measures against speculation
92.08.14	Independente		30	Cartas: Uma Brisa de Verão	António José Justino de Abreu	Waive of fares, congestion associated with fares, 90% Brisa are statly owned, far away from Europe
92.08.15	Público			Atravessar o rio Tejo de comboio vai ser uma realidade		
92.08.15a	Público			Port.787/92 - B regula programa de concurso público de adjudicação de		
92.08.19	Público			Nova ponte sobre o Tejo implica aumentos na portagem actual. Quatro CMs contestam governo.Portagens sobem p/700$		
92.08.19	Capital			"Guerra das Pontes" Junta protestos na margem sul. Almada, Barreiro, seixal e Moita contra travessia Sacavém -Montijo. Governo "desmente" portagens a 700 escudos		"priorities error" half million souls that are at atake against 60 thousand people presently not 'dependent' on the other band" increase of the fares to values up to 700$ in 1997
92.08.21	Correio da			Montijo já sente agora só vende		Increase in apartment cost - 7 to 10 thousand in 1 yr.Only the ones that cannot waite, sell.
92.08.21	Jornal			Batalha á esquerda da ponte	Nuno Guerreiro	War among the municipalities of the south bank
92.08.22	Público			Depois de reserva feita. RTC recusa transmissão de "spot" polémico.		
92.09.04	DN	Sociedade	16(1ª)	Nova ponte vai levar muitos prédios á margem Sul	João Pedro Fonseca	Lisbon closer. Comment written by 3 of the 26 members of the CSOP
92.09.05	Público			PSD acusa autarcas		
92.09.10	Público			Urbe apela contra especulação no Montijo.		
92.10.03	Público			Parabéns Sr. Ministro.	José Tudela	
92.10.06	DN	Sociedade	21	Polulação do Montijo duplicará com a nova ponte-afirmou ao DN a Presidente da Câmara Municipal, Jacinta Ricardo. Dossier produced. Build in the salinas,	Rui Homem?	President of Montijo expects the population to doubled with the construction of the bridge- 10 to 15 yrs
92.10.15	Capital			Desafio à iniciativa privada' construção de nova ponte já tem regras		Legislation:location and concession (including process)
92.10.16	Público			Publicadas regras do concurso para a nova ponte. Ferreira do Amaral quer assinar o contrato até final de 1993.		
92.10.16	Aeroporto		12	Portela: um aeroporto de partida		
92.10.25	Correio da Manhã			Nova ponte prepara-se para conquistar o Tejo	Mário Aleixo	Eng.Vistula:congestion solution is the construction of a 3rd bridge
92.10.30	Público			Governo salvaguarda terrenos para futura travessia do Tejo. Construção condicionada no traçado da nova ponte.		
92.11.02	Público			Nova ponte. Associação cívica em Alcochete e Montijo.		
92.11.08	Público			Nova ponte. Macário teme especulação.		
92.11.13	Público			Pedida ratificação do Decreto. PS e PCP contra junção de portagens das pontes.		
92.11.25	Público			Modelo físico parado "para obras".		
92.11.28	Público			PS acusa Ferreira do Amaral de recorrer a "pequenos truques". Uma questão de datas. PS acusa Ferreira do Amaral de "engenharia documental".		
92.12.05	Expresso			Com ou sem portagens as bichas são eternas. Não há ponte que aguente	João Garcia	With or without the fare the lines are eternal; Polluters in line =1600 contos of fuel consumption during the two congested areas
92.12.19	Público	Local	51	Os perigos da especulação na zona oriental	Fernando Ribeiro	Expo 98 land speculation threat; lack of information.
92.12.23	Público			Uma nova freguesia face à futura ponte. Alcochete.	Manuel Abrantes	
92.12.27	Público			Tejo		
92.12.27	Público			Nova ponte no fundo de coesão.		
92.12.27	Correio da Manhã			Nova ponte já provoca sinais de especulação	Mário Aleixo	AMA - request to participate in the consultive boar dof Gattel in accordance with the administrative code with half yr of life intervenes in PDMs
92.12.00	Exame			Negócios do Mar da Palha		
93.01.07	Público	Local		Oito candidatos para uma ponte		UE quer mais esclarecimentos sobre a ponte
93.01.07	Capital			Contrato da concessão até ao fim do ano		8 competitors for the new bridge

93.01.08	Correio da Manhã			Exige? a Expo 98 -Nova ponte a funcionar dentro de 5 anos		Need of the bridge due to the expo
93.01.15	Público			O xadrez das ligações	Lurdes Ferreira	Investors. Trafalgar leader of the main investor.Begining of the works in 1994
93.01.30	Público			ESSI Ponte nova sobre o Tejo.		ESSI financial consultant of the Bouygues
93.02.01	DN			Contas da história		Bridge of Montijo is 120 years
93.02.01	Público			Nova ponte sobre o Tejo. Moita atenta ao crescimento desordenado.		Pres CMMoita.."it is not the best solution".."1km from the center of Moita" A polemic bridge
93.02.03	Público			Ponte sobre o Tejo uma polémica morta.		Environmentalists, Soares and FA visit the estuary.Env: "the important is to minimize the impacts"
93.02.04	Público			ESSI na ponte sobre o Tejo.		
93.02.05	Público			Metro até à Expo		
93.02.20	Público			????		
93.03.03	?			Negócios. Concurso		
93.03.06	DN		36(última)	Decisão sobre a nova ponte sobre o Tejo. Relatório põe em causa Ferreira do Amaral		
93.03.08	Dário Económico			Nova ponte sobre o Tejo: o parecer que ninguém viu		
93.03.19	Público			Zona de defesa para a ponte.		
93.03.20	Público			"altamente danosa para o ambiente....		
93.03.24	Público			Ponte sobre o Tejo - Mota e companhia pré-qualificada.		
93.03.26	Público			"Se o Chase se fosse embora fechava as porta"	Fernando Pereira Coutinho	
93.03.31	Público			Nova ponte."Peça chave da circulação" na região de Lisboa.		
93.04.02	Público			Nova ponte sobre o Tejo no Carregado.IC Torres Vedras -Carregado já tem no calendário.		
93.04.03	Público			Nova ponte motiva controlo urbano.Decreto irrita autarcas a Sul do Tejo.	Manuel Abrantes	contra DL9/93, 18 de Março+parceiros menores
93.04.17	Expresso			Terrenos da nova ponte com encargos de mais valia		
93.04.17	Público			Port 366 A/93 - B		
93.04.17	DN	Negócios	1,1(3ª)	Critérios "demasiado exigentes"		
93.04.17	DN	Negócios	3	Três candidatos"caem ao rio"	Margarida Cabeleira	só dois candidatos chegaram á final
93.04.18	Público			Guerras políticas no Montijo		
93.04.27	Público			Economia portuguesa analisada no Financial Times		
93.04.29	Público			Nova ponte sobre o Tejo.Autarcas protestam contra controlo urbano na margem sul.		
93.05.11	Diário Económico			Escolhidos os cinco melhores projectos		
93.05.28	Público			Zona ribeirinha. Amigos do Tejo querem debate com candidatos		
93.06.05	Expresso			CP troca pendulares por travessia do Tejo (Carvalho Carreira)	Alexandre Coutinho	Fear that the line of high speed to the North would interfere with the train crossing in the 25th April
93.06.05	Expresso			Nova ponte sobre o Tejo. dois consórcios desistem do concurso	João Garcia/Fernando Gaspar	Too many issues to be defined
93.06.05	Expresso			Nova ponte implica aumento de portagens. Travessia do Tejo a 650$?		Need to increase fares up to 500$ or even 650$ and 750$
93.06.12	Público			CM de Benavente alerta para o excesso burocrático.Condicionamentos da novva ponte limitam autarquias.		
93.06.16	Público			Bento Pedrosa escolhida para a CREL em Carenque?. Carta de Soares.		
93.06.19	Expresso			Cartas: Ponte: a faixa da fachada Tejo		I heard FA announcing 6 road lanes in the bridge(when at the begining of his mandadte the tendering was cancelled because what was corrected was an increase to 5 lanes)?
93.07.08	Público			Nova ponte motiva controlo urbano. Autarcas da margem sul exigem maior clareza na lei	Manuel Abrantes-Alcochete	
93.07.17	Semanário			Nova ponte sobre o Tejo será inteligente		High technology will notify the driver of traffic problems
93.07.30	Público			Fundo de coesão financia 1°s projectos portugueses. Os milhões começaram a chover ontem.	Ricardo Valadares	Talks about big projects
93.08.12	Público			Previsões da ANEOP para o período 1994/99. Construção vai reanimar a partir de 1994.	Rute Sousa Vasco	Investimento de 11 milhões
93.09.03	Público			Impacto ambiental na Portela preocupa Loures. É presciso rifar??? a nova ponte.		
93.09.07	DN	País	19(2ª)	Ambientalistas acusam o governo de mentir a Bruxelas. Nova ponte em questão		Environmentalists accuse the governement to lie in Bruxels
93.09.09	Público			Nova ponte sobre o Tejo. Geota volta a contestar o corredor nascente		
93.09.09	Correio da Manhã			"Europa não deve dar dinheiro para a nova ponte"		
93.09.30	Público			Novo presidente da JAE em entrevista ao Público."FA é um bom treinador..."	Luis Miguel Viana	
93.10.02	Expresso			Ponte e Soponata: corrida termina dia 4		Oct 4 end of proposal submission; 3 concessors
93.10.02	Expresso			(Com a ponte sobre o Tejo na mira)Franceses fazem 'forcing' sobre Cavaco	Daniel Ribeiro	French investors and politicians are trying to impress the Portuguese PM.
93.10.08	Público			Nova ponte:propostas aceites		
93.10.09	Público			Ferreira do Amaral		
93.10.30	Expresso			Ponte sobre o Tejo já tem projecto		Models
93.11.08	DN			Comboios e barcos para minorar problemas de trânsito em Lisboa. Ponte em 97 não fará milagres		
93.11.09	Público			O Governo apresenta o plano de desenvolvimeno regional aos empresários. O "show" dos 6500 millhões	João Ramos de Almeida	Due dates, construction and foreign competition
93.11.12	Público			Coruche. CDU domina.		
93.11.13	Independente			Ponte sem 3		

93.11.19	Público			Nova ponte.Geota vai ao procurador contra corredor.		
93.12.03	Público			Odebrecht. ascensão rápida em Portugal.		
93.12.14	Público			Alcochete	Miguel Boeiro	
93.12.31	Expresso	Nacional	12r	Comunicações difíceis	João Garcia	1994=smaller budget than wanted.Increase of requirement level of the ellected people. "FA knows that the weight of any endevor crushes any opposition"
94.01.11	Público			8 organismos comentam o estado do ambiente em Portugal.A água é o pior	Barbara Reis	
94.01.15	DN	Negócios	1,3	GTM recorre da exclusão no concurso para a ponte		
94.01.20	Público			Expo 98 e ponte sobre o Tejo. CM de Alcochete "não quer ser parceiro menor".		
94.01.26	DN	País	1,28,31	Brisa vai "soprar" na nova ponte do Tejo	Luisa Botinas	Exploração deverá ser entregue a quem tem experiência,portagens
94.02.01	Público		39	Benavente e VFXira apresentam proposta - Paisagem protegida na lezíria e aeroporto no campo de tiro		Benavente e VF Xira apresentam proposta. PP? na lezíria. Vê o aeroporto no campo de tiro.
94.02.01	Público	Local	19	Paisagem protegida ne lezíria e aeroporto no campo de tiro (Benavente e VFXira apresentam proposta)	Jorge Talixa	"There is no other capital with these natural potentialities so close" Shoting field incompatible with the new bridge
94.02.04	Público			Mercado em construção	Ricardo Valadares	
94.02.24	DN	País	38	Ponte sobre o Tejo no Tribunal Europeu		Instituto D.Dinis
94.03.05	Expresso			Shell e Expo: acordo por 3 milhões		
94.03.26	Expresso			Auto Estradas-Brisa na portagem da ponte	Vitor Andrade	Brisa can explore the 25th April bridge and the new bridge under the name Briser
94.04.03	Público	Destaque	2,3,4,5,6	Nova ponte demasiadas dúvidas		
94.04.03	Público	Destaque	3	Montijo - Bruxelas quer mais explicações		
94.04.03	Público	Editorial	3	O erro do seculo	José Manuel Fernandes	
94.04.03	Público	Destaque	1,2,3	Nova ponte demasiadas dúvidas	Ana Fernanda	Exhaustive history
94.04.03	Público	Destaque	3	Montijo - Bruxelas quer mais explicações	AF/RG	Letter sent to Ascenso Pires director of the Environment. Compensation measures.
94.04.03	Público	Destaque	3	O erro do século?	José Manuel Fernandes	Never a endevor like this had so much polemic and so generalized adversity. PS against Barreiro initially
94.04.03	Público	Destaque	4,5	Sacavém-Montijo, Chelas-Barreiro		in favor and against arguments
94.04.03	Público	Destaque	6	Cronology		
94.04.09	Expresso			Nova ponte sobre o Tejo-Um do s dois concorrentes oferece á Brisa contrapartidas no valor de 140 milhões de contos		In a letter of 30.03.94 Bougyes offers Brisa 80% of the exploration and maintenance of future crossing - few days before last decision
94.04.16	Expresso			Ponte ainda treme...mas já se sabe que a construção terá inicio em Outubro próximo e ficará concluida em Março de 1998		Announcement before PM returns from China
94.04.20	DN	Negócios	1	Pontejo cai ao mar		Trafalgar is going to construct the new Bridge (Lusoponte) won yesterday
94.04.20	DN	Negócios	2	Metade da ponte é portuguesa		30% in each consorcium is French
94.04.20	DN	Negócios	2	Paris contente com qualquer resultado		
94.04.20	DN	Negócios	2	Empate ao nível técnico e financeiro		
94.04.20	DN	Negócios	2	Franceses queriam abrir mercados		
94.04.21	DN	País	39	"Esta ponte é uma birra"	João Joanaz de Melo	0.3% of heavy traffic, Population served.DGXI against, DGXVI is neutral
94.04.23	Expresso	Privado		Caras e Casos: Ponte perfeita	Luis Marques	All so perfect, "there is something wrong here"
94.05.01	Público	Local	55	Ministro FA cauteloso em Viseu. IP5 não será AE para já		
94.05.01	Público	Local	55	IP5 will not be highway for now	José Guilherme Lorena	
94.05.07	Expresso			Pontejo vai reclamar		pontejo accuses Trafalgar of not comply to requirements
94.05.14	Expresso			Obras públicas- Gattel atrasa-se e Pontejo avança	Jorge Fiel	Due dates for reclamations are postponed for later
94.05.21	Expresso	24 horas		Supremo ás voltas com a ponte		Gave no importance to the complain presented by LPN and requested clarification to the MPAT
94.06.03	DN	Negócios	12(filtima)	Dinheiro sobre o Tejo		
94.06.04	Expresso			Cavaco furioso com o aumento na ponte		PM furious for the increase of fare being published in the legislation. Two weeks before elections
94.06.13	DN	Negócios	1,6	Vozes da ira sobre o Tejo		
94.06.13	DN	Negócios	6	Gattel sem "escolha inequívoca"		
94.07.16	Expresso			Travessia do Tejo - Portagens atrasam nova ponte	Alexandre Coutinho	The government will not sign the agreement with Lusoponte before Setember due to fares. Banks back up.
94.07.16	Expresso	Nacional	3	Recuo fatal	José António Saraiva	The withdrawn of the Government was an error
94.07.16	Expresso	Alto Contraste		Acumulação de erros é origem de conflitos	Eurico Figueiredo	democracy of success' under fire
94.07.16	Expresso	Alto Contraste		Está em causa a vida concreta das pessoas	José Pacheco Pereira	'desestabilização' of people's lifes...due to modernization of the country